

Educational Supplement

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Getting the point... National Union of Teachers leader Fred Jarvis answers a demonstrator outside Church House, London last week. As negotiations in the Burnham Committee got under way noisy protestors reminded him not to "sell out" by backing the pay deal favoured by other teachers' leaders and their employers.

Cash-crisis school forced to suspend retarded boy

by Susannah Kirkman

A secondary school has suspended a pupil with an undiagnosed retardation disease because it does not have the resources to meet his needs.

Kenneth Graeme, 12, has a cumulative developmental illness and the physical, emotional and mental age of an eight-year-old according to his father, Mr Seamus Graeme, a teacher.

The deputy head at the Deane School, Bolton, Greater Manchester, had been too frightened to let his son go out into the playground with the older children.

Kenneth's illness has never been diagnosed. A Department of Health and Social Security committee refused to allow him growth hormone injections as there was no evidence to prove that a deficiency was causing his illness. Mr Graeme thinks treatment was withheld because it is too expensive - twice-weekly injections would cost £200 each.

Kenneth has been at the school since July last year but it has decided it cannot cope any more. His head-teacher, Mr Warren Bradley, said: "The staff have tried very hard but our resources are limited and we haven't been able to do our best for him."

Mr Bradley said Kenneth had considerable learning difficulties and often fell asleep in the afternoon as he was not very strong.

Suspending Kenneth was the only way to keep the matter moving, as Mr and Mrs Graeme had refused to allow Kenneth to be formally assessed under the 1981 Education Act.

Mr Bradley has written to Kenneth's parents to say his attendance at Deane is "not compatible with providing efficient education for other children, nor with the efficient use of resources" - two conditions laid down for the integration of children with special needs into mainstream schools by the legislation.

But Kenneth's parents believe he has the right to be educated in a mainstream school, but claim that Bolton L.e.a. has instructed primary schools to refuse to admit him.

Mr and Mrs Graeme fear that, if the L.e.a. assesses Kenneth under the 1981 Act, he will be forced to attend a special school. In August last year, the Graemes had Kenneth made a ward of court to "protect" him from the L.e.a.

Kenneth's parents have also complained to Sir Keith Joseph because they say that Bolton refuses to pay for pupils to be educated outside the state system.

The L.e.a. has refused to comment as a court case with Mr Graeme is pending. A meeting of the pupil suspension sub-committee is to take place next week at the school to decide whether to confirm the decision about Kenneth.

Muslim plan moves a step nearer

by Bert Lodge

A London Muslim school's bid to get voluntary aided status took another step forward this week.

Brent education committee agreed to support the school, which has been run independently in the borough for the past two years.

Despite a refusal of Labour members to back the proposal, the full council is expected to endorse a decision to approach the Secretary of State when it meets on April 9.

The Islamic primary school has 85 on roll and plans to expand to 170. Financed at present from Islamic trusts and fees from parents almost all running costs including teachers' salaries would be borne by the state if voluntary aided status is granted.

Justifying his colleagues' refusal to support the application, Mr Ron Anderson, Labour spokesman on education, said his party had a fine record in Brent of supporting ethnic minorities. "But we regard the campaign for this school as a gigantic red herring to the real needs of the thousands of Muslims in Brent. With 170 on roll you can say that 99 per cent of Brent's Muslim pupils are not going to go to the school."

Three London Jewish primary schools have been recommended for voluntary aided status by Brent education authority. They are the Independent Jewish Day School, the Hampstead Preparatory School and Pardes House.

New pay round opens as '85 deal is sealed

by TES reporters

Long-delayed talks open today on a new deal covering teachers' pay, conditions and career prospects in the wake of this week's official ending of the 1985 dispute.

A meeting at Acas, the conciliation and arbitration service, under the chairmanship of Sir John Wood - the man picked to lead the panel of "three wise men" to supervise the talks - is expected to set a timetable and lay down procedures for the discussions.

Sir John was asked by teachers to have been "blackballed" by management for the 1984 pay arbitration. Local authorities say this was a misunderstanding.

Sir John, 58, is chairman of the Central Arbitration Committee and of the Police Arbitration Tribunal. He was also chairman of the Standing Committee on Pay Comparability from 1980-81.

The other members appointed by Acas chairman Sir Pat Lowry are Mr Tony Peers, director of industrial relations at Babcock and Wilcox, and Mr Bill Kendall, who retired as secretary general of the Council of Civil Service Unions in 1983.

This week's fragile peace was still looking in danger as the biggest teachers' union, the National Union of Teachers, maintained its opposition to the agreement.

Its executive was meeting last night to consider joining the Acas talks, but employers warned it would be difficult to admit it while it refused to accept the Acas formula for a resumption of normal working.

The employers and the unions who have backed the Acas deal are keen to avoid confrontation over other issues in the wake of the pay agreement - giving a rise of 6.9 per cent backdated to last April and 1.6 per cent from March 31.

The NUT is now pressing for a meeting of the teachers' panel of

they meet the union's guidelines - which include using volunteer teachers at about £8 per session, paying heads and deputies who cover and reaching defined staffing levels.

The NUT is still planning a boycott of preparatory work for the new GCSE, although Mr Chris Patten, Education Minister, is sticking to his line that it will go ahead as planned. The NASUWT has not lifted its boycott yet, either.

Neither the Association of County Councils nor the Association of Metropolitan Authorities has joined the clamour to postpone it. The ACC's education committee voted by 15 votes to 14 to support its introduction in September.

Further evidence that the dispute has triggered a boom in applications to independent schools came this week from Gabbitts-Thring, the educational consultants.

They released figures on Monday showing a 13 per cent increase since February last year in inquiries from parents interested in private education. In London and the South East, the number of inquiries has shot up by 25 per cent.

Especially interesting, say Gabbitts-Thring, is the rise in inquiries about preparatory schools - up to 20 per cent on last year for boys' prep schools.

How agreement came, page 3
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Burnham to get it to adopt a 1986 pay claim.

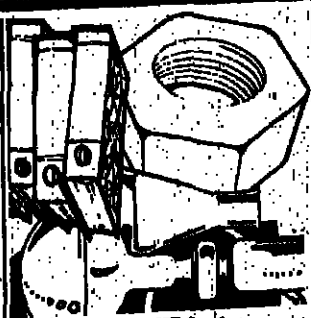
The NUT wants a rise of £1,700 a head, while NASUWT has proposed a changed salary structure that would cost about 35 per cent to implement.

Schools still face fresh disruption next week despite this week's agreement. The National Association of Head Teachers is expected to choose one day for a lunchtime shutdown as part of its campaign for a national agreement on midday supervision.

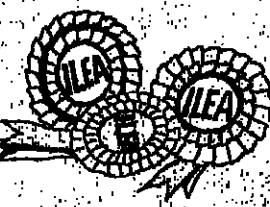
It could also advise its members not to co-operate in local schemes unless

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Fudge - but also hope . . .

Burnham succeeded in weathering the week-end storm and on Monday ratified the pay rise provisionally agreed in the Acas talks. But it was not all plain sailing. You don't have to go very far these days to find a lawyer lurking round the corner. So it was this time. The National Union of Teachers has come to set great store by its own narrow view of what the Remuneration of Teachers Act of 1965 allows the Burnham Committee to consider. Taking the jaundiced view it does of the Acas deal, the union was inclined to argue that Burnham could not discuss matters relating to conditions of service, nor yet have regard to talks on these matters which had taken place elsewhere, because to do so would breach the Act which restricts its remit to salaries. Fortunately it does not seem to have required an excess of ingenuity on the part of the chairman, Sir John Wordie, to confine the formal Burnham decision to the specific salary recommendation, leaving the Acas agreement with the unions (other than the NUT) which made this possible, implicit in the minds of all the parties.

So, failing any more legal excitements, the pay rise goes ahead (probably in April - only 12 months later) and the structure and contract talks start today, under the benign supervision of Sir John Wood and his colleagues. After Gilbertian attempts to discover the exact composition of the teachers' panel of CLEA/At, it now turns out that the NUT still has an absolute, blocking majority. Not unnaturally, the other unions refuse to accept this, and it will not be required to ratify the Acas agreement. So Mr Peter Dawson of PAT who argued in a letter to *The TES* on February 21 that CLEA/At would have no standing in the matter has proved right. If the committee is to have any future usefulness, the teachers' side will have to be changed to follow the Burnham formula. If, that is, the pretence of keeping salary negotiations separate from negotiations on conditions of service, is allowed to continue much longer.



Sir John Wood: starts talks

With a bit more help from Acas and another liberal dollop of fudge, the authorities and the non-NUT unions managed to keep alive (albeit in an even more attenuated form) the commitment to a full return to normal working during the period of the Acas-managed negotiations. Their difficulties are obvious. The dispute is far from over - in many respects, the argument is just beginning - and in so far as the nature of the teacher's professional duties is one of the main issues, the unions are not going to concede their employers' notion of "full normal working". On the other hand, they had put their hand to a promise to "return" to full, normal working, and in ordinary usage this could only be understood to mean going back to a professional role which includes all manner of "voluntary" duties, regarded not as optional extras but as integral to the job. Easy as it is to see the

dilemma faced by union leaders, given the state of desperation which a year-long dispute has generated and the way in which they have exploited the allegedly voluntary nature of many of the teachers' normal duties, there is no doubt that teachers' standing with the public will suffer still more if it looks as if, notwithstanding the truce, the skirmishing goes on.

And, of course, the skirmishing will go on because the NUT, with nearly half the teaching force among its members, stands aloof from the settlement and will continue to do things - or tell its members not to do things - with the express intention of inconveniencing parents and spoiling things for pupils.

A six-month truce with the outside chance of some sort of a deal with which to confront the Secretary of State is all the Acas arrangements hold out. There is only an outside chance of getting that far, and there would still be a long way to go before the Secretary of State - any Secretary of State - could be persuaded to pay his or her share of the cost which will far exceed the £1.25 billion which Sir Keith has so often brandished before a bemused public.

The NUT has pointed all this out, while standing pat on its own principle of refusing to use conditions of service as a bargaining counter for a pay rise. This principle, incidentally, has been repeated so often that some people may even have come to believe it can be validly sustained. But who ever heard of an employer paying out salaries without regard to the services which employees are contracted to perform? What principle makes this remotely plausible?

Mr Jarvis is probably right. The procedures now starting under the aegis of Acas have a long way to go before success is in sight. A breakdown and a resumption of hostilities look much more likely than success and a stable peace. But even a slim chance is better than none. The NUT's alternative is totally negative, with nothing to offer teachers, parents or pupils, short of the improbable surrender of the Government. The Acas plan is, at least, worth a go.

COMMENT

Fallacies exposed

Included with Oxford University's response to the Green Paper on higher education (page 5) is a paper by Michael Brock, the warden of Nuffield College, of which extracts are printed on page 19. It is a good read and will repay anyone's study.

Much of it concerns the Switch, the shift which the Government wants to be about to increase the number and the proportion of students in higher education doing maths, science, engineering and other forms of technology.

Mr Brock shows that this Switch will simply not come about unless there are profound changes in the secondary schools, however willingly higher education co-operates with Sir Keith. Desirable, or undesirable, the change depends on an increasing proportion of candidates coming forward with A level or equivalent qualifications in maths, science and engineering. It is already clear that this is not going to happen in the medium term because the numbers in the pipeline can be calculated several years ahead. What can also be seen is that things are actually going to get worse, not better, because of the failure to recruit and train enough science teachers even to maintain existing staff levels in these subjects, let alone improve them to enable more pupils to study science and study it longer.

If the staff were available in sufficient numbers and their teaching was sufficiently good to motivate more pupils, might it be possible to hope that new criteria at GCSE and the springing being undertaken by the school might hold out the prospect of achieving all 'er all', is Sir Keith's

optimistic strategy. Mr Brock, however, clearly doubts if this would be enough to break the tradition of premature specialization as long as the sixth-form curriculum remains unreformed. A/S level is not going to be significant in this context. He notes that the chorus demanding basic changes in the sixth-form programme is now swelling.

Of course, as one would expect, Oxford is inclined to assume - not altogether unreasonably - that if sixth forms aimed at more breadth and less depth, the three-year first degree course would have to be extended; not in all subjects, but any rate in some. But Mr Brock points out that Britain has the shortest university course, the lowest proportion of students in education beyond 16, and the earliest specialization requirements, and concludes that it is early specialization which provides the key.

If international comparisons are to be made, it is not in the output of graduate scientists and engineers - taken together - that Britain lags behind West Germany, but in the average pupil's length of education and levels of achievement. A central pillar of the Government's higher education - the need to bring about the Switch inside existing university provision - is based on a false premise. It is the same false premise which has imposed, inappropriate curricula on the secondary schools geared to an elite university system.

Mr Brock does not say what to do about the shortage of science teachers - except to talk of bonus payments which, given the size of the disparity between teachers' pay and others, would have to be very large. Any such incentives would have to be backed up with expensive and efficient distance learning packages and some sort of "open" science school. But "expensive" in this context would be cheap at the price if in this way the gaps would be plugged.



London rehearses

Any wistful ideas that this year's historic direct elections to an education authority might encourage non-political campaigning on strictly educational issues have by now been firmly squashed.

With two months to go until polling day, the ILA campaign has begun sluggishly, but now that Norman Tebbit has given it a kick-start into brutish life (page 6), it is clear that themes like nursery school provision, adult classes, or even secondary school improvement, are not likely to be given a high profile in the public polemic.

Leaving aside the Tory chairman's apparent conviction that the central issue will be 19,000 teenagers truanting daily from lesbian CND peace studies (and it is not clear how to separate this bunking-off count from the numbers officially turned out for every 20-minute action), it does look as if the big guns will be blazing away at vouchers and private privilege on one side, and left-wing subversion on the other. The ILA direct elections, in short, are already being turned into a dress rehearsal of the education platform for the general election, and the splendour of the Fulham by-election is

bound to emphasize that trend; the campaigns are already overlapping, and polling days may even coincide. It would be naive to expect too much of the manifesto but of the two so far launched on an indifferent public by heavyweight national figures, it is fair to say that the Alliance document shows evidence of realistic and well-informed educational thinking, and that the Tory weapon sprays truisms and sweeping assertions from the hip, without much sign that its authors have direct knowledge of what is really happening in London schools.

Does the promise to stop the "flood of nonsense from County Hall", for example, refer to the solid documents from Hargreaves, Thomas and Fish, or just to the voluminous equal opportunities and multi-ethnic education initiatives? If the Conservatives are serious about better links with industry and technology, why did they miss a trick by not pointing out that ILA under Labour has not accepted TVEI money?

Some of the political venom already being injected into the campaign may reflect a measure of desperation in that both Labour and Conservatives have found it difficult to draft a full slate of candidates. The lists so far indicate that some familiar faces will be missing next time round on all sides, through involuntary or voluntary deselection. A more hopeful sign for the future are the new recruits from the parent group and from governors, although significantly they are coming in under party political umbrellas.

no comment

West Sussex: Education chiefs are allowing nine girls to have lessons at home because they are pregnant. The girls are among 46 children who get home visits from teachers. *Oxford Mail*, February 24.

Second opinion

Vouchers can damage your health

Education is firmly back on the political front burner. The Prime Minister has clearly signalled a personal interest in improving standards, and a desire to pursue radical changes in the way the schools system is run. Her renewed support for education vouchers, for example, was confirmed by her press secretary Bernard Ingham at a Downing Street briefing last week.

Like any major party, the Conservatives contain within their ranks a variety of views. In education, most see the priority as improving standards in the maintained sector by the sort of initiatives that Sir Keith Joseph has launched throughout his reforming period as Secretary of State.

For some while now those on the far right have despaired of Sir Keith. They hoped he would follow a more ideological path, rolling back the state's involvement in education.

They were to be disappointed. Though "intellectually attracted" to ideas like vouchers, Sir Keith subjected them to rigorous analysis and found them wanting. He has ended up agreeing with his deputy, Chris Patten, who once described vouchers as "theoretically interesting, practically hopeless".

Over the last couple of weeks we have seen a plethora of press reports about various schemes to "privatize" education. There were reports on companies funding schools, the resurrection of vouchers, and a new direct grant scheme for primary schools.

While some schemes look as if they were written by someone on a weekend pass from the funny farm, others are serious contenders for Government support. From the loopy far right to a few senior Ministers, there is a desire to look at alternatives to the present maintained system.

But is this the right direction? Sir Keith concluded the opposite. He has proposed a number of reforms aimed at improving the system we have. Programmes like the Assisted Places Scheme and direct grant schools are fine for the minority who can use them, but taking a few people out of the system is no answer for the majority who remain in it.

What parents want for their children is a school that gives a high standard of education. Choice is important, but most parents will want to exercise choice only if their local school fails to deliver what they need. The answer is not to make escape from poor schools easier for those who can best play the system, but to improve the school so that parents will not want to escape from it in the first place.

This is what Sir Keith and Chris Patten are trying to do. It is a pity that their critics do not spend more of their energy helping to improve the maintained sector instead of trying to undermine it.

The strongest allies of Tory right are such people as members of the NUT's inner London branch, who are planning further disruption of schools when everyone else is trying to make the Acas settlement work. Every act of disruption that now takes place (especially where the quality of education may not be that high in the first place) strengthens the hand of those who argue for privatization.

But should these radical ideas be taken seriously? We have heard it all before. If it is all a pipe dream, then it should carry a Government health warning. But ideas that have the personal support of any Prime Minister have a good chance of success. This is no exception.

Dimitri Argyropoulos

Dimitri Argyropoulos is a member of the Conservative National Advisory Committee on Education, of which he was chairman from 1979 to 1982. He is the prospective Conservative candidate for

Pay rise achieved after week of fine tuning

by James Melkile

The 1985 pay rise for teachers in England and Wales was only achieved after another week of delicate negotiation.

Four meetings at three London venues were needed before the local authority employers and five teacher unions finally agreed terms.

And that meant more money too for members of the National Union of Teachers which was still attacking the deal, arrived at through the conciliation and arbitration service, Acas, as the Government prepared to rubber-stamp the increase.

Hopes of a deal rose a week ago on Wednesday when the National Association of Schoolmasters/Union of Women Teachers announced a "yes" vote on the Acas package.

But the employers were getting nervous over what constituted the return to "full normal duties" which they wanted to accompany the pay rise. Talks at Acas in St James's Square, London, on the Wednesday evening failed to resolve the issue.

The two sides, minus the NUT, were back there on Thursday evening and early on Friday another form of words promised that all instructions or advice issued in the 1985 dispute would be withdrawn and the position would revert to the one that existed before the dispute began.

Tired negotiators went to Church House in Great Smith Street, Westminster, for the Burnham meeting on Friday morning. They were greeted by noisy demonstrators, mostly NUT members shouting at those waiting a deal and giving a rousing welcome to the NUT representatives. It was a reception that upset Labour management leader Mrs Nicky Harrison.

The two sides never met. The I.e.a.s were still worried by the question of "normal working" and refused to withdraw letters issued in more than 70 areas reserving the right to dock pay

from teachers who did not work "normally".

The teachers' panel meanwhile formally adopted the pay proposals and the rest of the Acas memorandum including the formation of an independent panel to report on pay, structure, and career progression.

The NUT also warned of a legal challenge on the ability of Burnham to discuss matters related to conditions of service, saying these were the province of the CLEA/At to discuss the following Thursday. Other unions accused the NUT of filibustering.

Talks resumed after the weekend at the Connaught Rooms, Holborn. More words were found to get round the difficulty of the letters and help restore an atmosphere of calm to schools.

The employers were again concerned by the possibility of local disputes if NAS/UTW or Assistant Masters' and Mistresses' Association members did not restore former goodwill.

The teachers, again excepting the NUT, agreed an addendum that "for the purpose of the Acas talks, and as long as those talks are in progress, no action should be taken that is likely to make the existence of the letters the basis of a dispute".

The full Burnham meeting took little more than an hour, with the committee's independent chairman Sir John Wordie, QC, ruling that only the pay element of the Acas package would be referred to the Secretary of State - thus pleasing the NUT which said this justified its opposition to a pay and conditions trade-off.

The union was considering last night whether to take the matter any further. Partial peace was therefore declared on Monday evening. The NAS/UTW was still saying there had been no climbdown over what a teacher's duties were.

The employers had one view, the teachers another, said general secretary Fred Smithies.

He said the organizations backing the Acas deal would go into talks involving the independent panel, whether or not there were difficulties at CLEA/At.

The employers too were keen not to wreck the fragile peace as neither side spelled out whether continuing sanctions by the NAS/UTW against the GCSE exam would constitute a further stumbling block.

Attention switched to the NUT offices in Mabledon Place, near Euston, on Tuesday where the teachers' panel of CLEA/At decided not to let in the Professional Association of Teachers.

But that unity was soon shattered as the NUT claimed a majority when it came to voting on the Acas memorandum. Most of the other unions walked out, the AMMA stayed in, but refused to vote, and the Acas deal was voted on 9-0.

The row led David Hart, general secretary of the NAHT, to accuse the NUT of gerrymandering.

But the NUT says Acas had ruled that the union had a majority of one on the panel back in 1978 - and a letter to the management panel earlier this year from an officer at the Local Authorities Conditions of Service Advisory Board (LACSAB) had confirmed the position, said the union.

The NUT further justified its position by saying that the NAS/UTW had previously increased its own representation on the panel from three to four and the union was now merely increasing its strength by one to reflect the size of its membership.

The other unions labelled CLEA/At a dead duck and made clear there was even a possibility of voting with management at the body's meeting at LACSAB's offices yesterday.



Pay message: NUT members demonstrate outside the Burnham meeting.

Poly researchers say heads are still far too autocratic

by Bert Lodge

Headteachers are still being too autocratic in their management of schools and should instead discuss problems with staff, a research project has found.

According to a three-year project funded by the Department of Education and Science, this attitude from heads can only damage their credibility at a time when better liaison with staff is needed.

At the same time, union interference coupled with withdrawal of staff goodwill is causing heads major concern, the study shows.

The project is the first substantial research evidence on staff management in schools in the United Kingdom. It was conducted by Mr Geoffrey Lyons, Mr Ronald Stanning and Mr John McQueney of North East London Polytechnic faculty of management.

They selected 40 secondary schools in six local education authorities and included both male and female heads and heads with differing lengths of experience.

A picture emerges of heads who are not equipped or trained to deal with the growing number and complexity of staff management problems.

"The headteacher is called upon to deal with these matters virtually on a daily basis and has done so with a lack of the formal knowledge and the background of skills and experience which would be available to him or her as a manager in other employment sectors."

Education authorities do not escape blame. The individual officer is "no better" equipped than any head, and concerted and integrated policies for staff are conspicuously absent.

Heads generally agree that their autonomy and authority are most eroded in the recruitment and appointment of staff. In this area, research suggests that heads' involvement is becoming "increasingly circumscribed by protectionist policies and local collective agreements (between employers and unions) to minimize the full repercussions of contraction, especially redeployment".

Heads tend to be excluded from non-teaching staff appointments, the researchers found. This was due in part to support staff supervisors being located outside the school, and partly to local authorities, as opposed to I.e.a.s, adopting hiring policies through their personnel departments.

Related to this, heads found themselves in difficulty when confronted by a refusal to obey instructions. "Care-taking staff particularly would typically refer the head to conflicting instructions received from the supervisor at central or area office or claim they were not informing to union policies."

In fact, staff development in administrative and management development was not, with few exceptions, widely practised in the schools visited in the main study. And while I.e.a.s are currently paying much more attention to establishing procedures in employ-

ment relations, they are wrong to assume that heads will be bound by them, the report says.

Another frequent complication was where heads would seek to regulate staff behaviour by appealing to professional norms where the leader is projected as a first among equals in a college of peers.

The report concludes: "There appears to be widespread recognition that a new professional consensus must be forged between headteachers and staff. However, our study suggests that only a small minority of headteachers are initiating debates within their schools aimed at developing mutual understanding and fostering a sense of common purpose among the adult community of the school."

Employment relations in maintained secondary schools. By G Lyons, R Stanning and J McQueney. From the National Development Centre for school management training, 35 Berkeley Square, Bristol. £4.

Ms Auriol Stevens has been appointed to set up and direct a new Universities Information Unit for the Committee of Vice-Chancellors and Principals, Ms Stevens, who is a former deputy editor of *The Times Educational Supplement* and an ex-education correspondent of *The Observer*, has been a member of the staff of the weekly Channel 4 programme *A Week in Politics*.

New admission package fails to sell

Oxford University's new admissions system, aimed at attracting more applicants to state schools, has failed to do so in its first year of operation.

Figures presented to college admissions tutors show that the proportion of candidates from the maintained sector fell from an average of around 33 per cent in 1980-83 to 48.2 per cent last autumn (1984-85) with a sharp drop in the autumn of 1985.

On the brighter side, however, the success rate of maintained sector candidates rose from the 31-34 per cent range of 1980-83 to 38 per cent. This increase could lead to more applications from state schools next year.

The changes in the admissions system, recommended by a committee chaired by Sir Kenneth Dover, president of Corpus Christi College, Centre on the ending of the post-A level entrance exam, which was thought to favour "public" school pupils. Candidates must now either take the exam in their fourth term in the sixth form (Mode E) or seek admittance on the basis of A levels and an interview (Mode N).

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An uneasy peace will break out

The signs that the fragile agreement constructed by the Advisory, Conciliation and Arbitration Service could break up, even if the parties ratified it before Burnham and the Council of Local Education Authorities/schoolteachers committee met, were always there.

The declaration of truce (if hardly peace itself) at last Friday's Burnham meeting did not materialize as intended, such were the strains between the management and teachers' panels and the tensions within their own groups. The majority group within the teachers' panel had ratified the settlement, but adoption by Burnham itself had to wait till Monday. When it came it was tight-lipped and mistrustful.

Yesterday's CLEA/AT meeting had still to be held when this week's issue of *The TES* went to press, but one thing was already sure. Confusion about the committee's constitution and membership and the NUT's deep hostility to the Aca's deal guaranteed that the outcome would be a lottery.

I am going to assume, however, that the Aca's memorandum of agreement, as the management panel and the majority group within the teachers' panel originally intended, is either by now fully adopted or that, pending attempts, were, or are, the employers' fears about the durability of the truce well founded?

That the NUT would do everything to capsize the deal was obvious from the start. That they would continue disruptive action - at what levels remains to be seen - was not in doubt, and the local authorities signed and subsequently ratified the Aca's memorandum fully aware of that fact, but optimistic that the deal could survive continuing NUT guerrilla warfare. What diluted the optimism was the fear, narrowly overcome, that members of the signatory unions - and the NAS/UWT and AMMA in particular - would continue hostilities as well. The reason behind the continuing



Peter Smith (left) argues that wisdom and tact will be needed on both sides if teachers are to resume doing what has yet to be defined

few need little explanation. The dispute has been unprecedentedly acrimonious and the longer it has lasted, the greater has been teachers' emotional investment, whatever their union loyalties, in a demonstrably successful outcome. The Aca's deal is not, in itself, that outcome. It merely provides the route to it. It is a route few teachers are enthusiastic to tread, fearing it to be doctored with Government bad-mouthing and NUT ambushes. At best they see it as the only navigable way forward; at worst, they see it as a blind alley hardly worth exploring.

Campaign weary, and with no positive guarantees - least of all from the Government - that the Aca's peace talks will lead to an honourable, permanent settlement, few teachers, if any, will return to the high levels of personal professional commitment they displayed before the onset of hostilities. Quite apart from anything else, they have turned their backs, perhaps permanently, on the self-imposed workaholicism which they fear have come to exploit. They will certainly resist any attempt to legitimize that exploitation through a new, one-sided definition of their contractual duties. Little of this can be any surprise to the employers.

If they cannot have been surprised by the mood of even those teachers willing to subscribe to the Aca's agreement, what explains the employers' last-minute cold feet? Why, at the eleventh hour, did they very nearly back out of the deal?

The answer lay in a fundamental contradiction in the memorandum itself. On the one hand, it committed both employers and teachers to negotiate "constructively and expeditiously" - a clear definition of the contractual duties and responsibilities (including defined limitations) of teachers - and the duties and responsibilities of the employers themselves. On the other hand, it required the teachers' organizations "to take immediate steps with a view to the cessation of all industrial action and a return to full normal duties".

In other words, teachers would resume doing what both sides agreed had yet to be defined. The paradox itself was hardly new and in the past has mattered little, for when a dispute came to an end, normal service was, in the words of the television caption, resumed as soon as possible. The authorities saw it as the teachers returning to their normal duties; the teachers regarded it as restoring their voluntary goodwill. What was new was the paradox being set out in print for all to read. What was also new was that teachers knew precisely what the employers would like their full, normal duties to be.

For the local authorities and Government have at various stages during the dispute made quite clear their negotiating baseline in the forthcoming conditions of service talks. It was set out in detail in the November 1984 "New Remuneration Structure for Teachers" (which AMMA published for its members and was praised by the local authorities for doing so). Sir Keith Joseph was not remotely coy about publishing the Government's 14-point view of what a teacher's contract should contain, a list the authorities incorporated almost verbatim in their September 1985 proposals.

For more significant were the letters most I.e.s.s. sent to individual teachers during the dispute setting out their view of teachers' current contractual obligations with threats of financial penalties on those who failed to toe the line. Those letters spelt out the negotiating baseline yet again, but for some authorities they went further: they were the justification for making salary deductions. But whether I.e.s.s. acted upon their threats or not, the letters embittered even those teachers taking

little or no action. Intended by most authorities as "without prejudice" legal safeguards, they were seen by teachers as manifestos for exploitation. They probably raised the level of action rather than reduced it.

Could the two major teacher signatories persuade their members to endorse a 1985 salary agreement which was modest at best, and simultaneously agree to conditions of service talks in 1986 without making their own negotiating baseline position on contractual duties equally clear? And do so in the context of a large-scale NUT agitprop campaign and a profession in a trough of deep uncertainty about what the future might hold - if it held anything at all?

Manifestly not. It really would have had to have been a very naive local government politician who failed to anticipate that AMMA and the NAS/UWT would make clear to members just where they drew the line between contractual and voluntary activities.

The local authorities must surely have expected that both unions would unambiguously reject any suggestion that the lifting of sanctions implied acceptance of the I.e.s.s. view of the current position or future assumptions. It was entirely predictable that they would feel it essential to reserve their members' rights before the forthcoming negotiations began and leave no room for doubt that they were doing so.

So what will happen? Now that the deal have confirmed that they will, as they promised, withdraw their sanctions, an uneasy peace will break out. And it is for all of us to try to maintain it so that, under the Aca's appointed panel, the badly needed talks can take place against a period of as close to calm as the NUT will permit.

For those members of the teachers' unions in the majority group within Burnham who have been taking action, it means a distinct grating of the situation which applied before this appalling dispute began. For the local

authorities, it means coming to the negotiating table with a genuine willingness to talk about their duties and responsibilities. For the Government, it means an opportunity to abandon, without too much loss of face, its sterile policy of confrontation with teachers.

What will that mean in practice? Will there be a swift and trouble-free return to pre-dispute cover arrangements? Will parents now be able to meet teachers who may so far have been merely names? Will lunchtime supervision be restored, pending the introduction of newly negotiated arrangements? Will extra-curricular activities shyly emerge from their long hibernation?

It would be unwise for anyone to expect too much. Sensibilities are far too bruised for that. Equally, however, something more permanent than a Beirut lull is needed if the memorandum of agreement is to stand any chance of survival.

What is now needed is good sense on both sides. The employers and the teachers have declared their hands, and for the latter it was an essential exercise. For the real hard bargaining to get underway, the local authorities need to prove the genuineness of their claimed goodwill, and they will not do that against a background of repeated threats. Teachers have a reciprocal responsibility to restrain their understandable bloody-mindedness, for schools need once more to become orderly communities. If they do not, the public will neither understand, nor will they apply pressure on the Government to provide the substantial resources of which schools and teachers have been so long starved.

In the immediate future, perhaps greatest responsibility will rest upon headteachers. However battle-scarred they may be, they must appreciate that their classroom colleagues have far more at stake in the negotiations than they. They can no longer presume upon their staff's willingness to blur what is undeniably contractual, what is reasonable professional expectation, and what goes far beyond the call of duty, into the realm of the heroic.

The best guarantee of a return to normality in professional goodwill between colleagues able to bury their present differences to achieve a longer term, more important objective. The biggest threat to the fragile truce will be the trigger-happy subalterns too keen to demonstrate control over the troops to the town and county hall brigadiers.

Peter Smith is deputy general secretary of the Assistant Masters and Mistresses Association.



Sir Keith Joseph, seen, views on what the teachers' contract should contain



It's not so easy, rues Sir Keith

Sir Keith Joseph firmly slapped down the notion of a viable education vouchers scheme at a Tory local government conference attended by many of the party faithful last weekend.

The Education Secretary told Conservative councillors and candidates in the run-up to the May local elections that while vouchers were desirable, they would not be easy to introduce. Mrs Theresa Gorman, a Tory councillor from Westminster, had earlier told Sir Keith at the Wembley conference that the Government could guarantee parental choice in schools "very simply".

"What we have to do is put purchasing power into the hands of the educational consumer, so that when they are faced with an appalling situation in a school they can go elsewhere. We can very simply put purchasing power back where it belongs."

"All we have to do is extend family allowances to include an educational voucher to the value of what it costs to teach their children, and we have set parents and young people free," Mrs Gorman said.

But Sir Keith replied: "It is not very simple, I assure you." The problem was, he explained, that the State had to ensure education for every child, free at the point of delivery.

"It is not very simple to provide these imperatives and at the same time go down the road Mrs Gorman wants. I would have liked to have gone down this path, but I tell you that if you do, you need very long and very complex legislation."

Full conference report - page 6

Cash "credits" to broaden parents' choice of schooling - high on the Tories' political agenda - were this week backed by a right-winger but ruled out by the Education Secretary. Biddy Passmore and Mike Durham report

Free marketer urges voucher plan on Thatcher

With inspired timing, one of the most persistent advocates of the free market in education published a paperback this week urging the Government to think again about voucher systems.

The book appeared only a week after press reports, strongly endorsed by No. 10 Downing Street, that Mrs Thatcher was doing just that.

Mr Arthur Seldon, former editorial director of the Institute of Economic Affairs, a free-market policy centre, puts his case in terms calculated to appeal to the Prime Minister.

He blames sabotage by DES officials - with Sir Keith Joseph, the Education Secretary, their hapless prisoner - for the Government's abandonment of the voucher before the 1983 election.

His book, *The Riddle of the Voucher*, proposes moving education from the "culturally conservative" Department of Education to "an enterprise-oriented agency such as the Manpower Services Commission". This is a plan known to have some appeal for Mrs Thatcher and even more for her territorially ambitious Employment Secretary, Lord Young.

Most persuasive of all, Mr Seldon suggests that the introduction of vouchers could have prevented this year's damaging disruption in education by placing teachers at the mercy of parents' power to remove their children from affected schools.

And a system under which parents

are given a voucher or "credit", equal to the cost of an average child's state education, which they could then "cash" at the school of their choice, would in the eyes of many Tory radicals be the simplest way of doing it.

But, as Sir Keith reminded Conservative local councillors last weekend (see left), introducing vouchers is not nearly as simple as it sounds.

He was "intellectually attracted" to vouchers when he became Education Secretary in 1981. But after two years' work and the rejection of a plan by his Cabinet colleagues, he was forced to conclude that there would be "great practical difficulties in making any voucher system compatible with the requirements that schooling should be available to all without charge, compulsory and of an acceptable standard".

Mr Seldon, who says the idea was ditched for political and not practical reasons, has little time for such objections. Drawing on submissions to the DES by a group of economists and other academics, he answers some of the obstacles raised by officials.

● The extra costs of vouchers for the 5-6 per cent of children whose parents now pay fees, enabling popular schools to expand by taking surplus places - would be "essentially short-run", says Mr Seldon.

He argues that the change to voucher financing "would, before too long, raise the costs of education but reduce them by improving its efficiency".

● On lack of supply, the DES memorandum had argued that existing private schools would limit increases in num-



One way of introducing vouchers foreseen by Arthur Seldon (right) is an extension of the Assisted Places Scheme operating in independent schools.

bers and that starting up private schools was "a slow, expensive and risky business".

But Mr Seldon says this is "an unsubstantiated pre-judgement" and cites the appearance of 4,000 managing agents in response to the Youth Training Scheme "voucher" as evidence that supply springs up rapidly to meet demand.

● On the question of fluctuating demand Mr Seldon says that 2,500 private schools solve these problems every day.

● As for ensuring adequate standards, the DES had argued that this obligation on the Government would mean that local authorities would continue to have to "prop up" schools.

Mr Seldon says parents, not schools, should be "propped up", and he puts his faith in the market to ensure quality. If parents could escape from low-achieving state schools, standards would rapidly improve, he claims.

These arguments do not appear to take account of the plight of the many children who, either through bad luck or parental indifference, would land up in the schools nobody else wanted, caught in a vicious downward spiral of falling rolls and money.

In his book, Mr Seldon describes five practical ways of introducing vouchers. These include an extension of the Assisted Places Scheme and a programme in "four logical stages" which, he says mysteriously, was "devised during 1982-3" but stillborn.

This starts with a flat-rate central government grant to I.e.s.s. for each state pupil, proceeds to its extension to all pupils, including those in independent schools, then to its replacement

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Higher education cuts must stop - Oxford

by Hilary Wilce

The Government's intention to prompt a shift towards science and engineering within the universities will come to nothing unless school maths and science teaching is greatly strengthened, Sir Patrick Nell, the Vice-Chancellor of Oxford University, has predicted.

The steady reduction in public funding of higher education also has to be halted, Sir Patrick says in the university's response to the Green Paper on the future of higher education.

Oxford's reply is only one of many critical reactions to the consultative paper. "We wait with deep anxiety for evidence that the Government is listening," Sir Patrick writes.

While agreeing that the number of engineering and science places should be expanded, Sir Patrick points out that "higher education will obviously be in real difficulty while the pressure of well-qualified applicants in these subjects remains relatively weak... we fear that it will not be possible to achieve a truly significant 'shift' until some of the difficulties in the schools themselves, in particular in relation to the teaching of physics and mathematics, can be remedied."

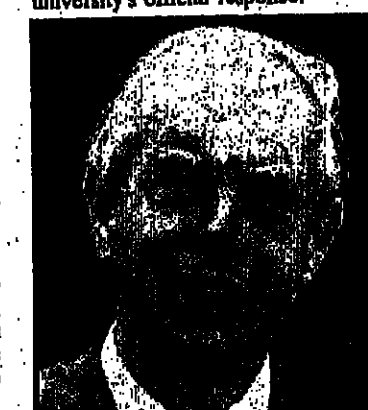
Sir Patrick attacks the Green Paper for assuming that higher education must have contributed to the country's disappointing economic performance and questions whether investment in this area is high enough.

The "major disappointment" of the Green Paper, he says, is that it

assumes, without debate, a continuing decline in resources. He also believes its projections of student numbers are too low.

In addition, he castigates the Government for dropping its plans to produce a consultative paper on student finance, and urges it not to withdraw housing and unemployment benefits from students.

The vice-chancellor comments to Sir Keith Joseph a paper prepared by Mr Michael Brock, the Warden of Nuffield College, Oxford, which further outlines problems in school science teaching. The paper, extracts of which appear on page 19, was sent to the Education Secretary along with the university's official response.



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Lack of staff hampering prison classes

by Valentine Low

Education in British prisons is suffering because not enough officers are available to escort prisoners to and from classrooms, MPs were told this week.

Mr Paul Cavadino, senior information officer of the National Association for the Care and Resettlement of Offenders (NACRO), told the Commons Select Committee on Education that Liverpool Prison lost a complete day of education provision last month due to staff shortage.

In the same week, Holloway Prison, where the education department is operating at one-third of its capacity, had no day-time classes at all, he said.

While the Home Office says there had been no cut in the cash spent on education in the prison service, Mr Cavadino said this should be considered against the background of an increasing prison population and rising costs. He added that binding minimum standards should be introduced.

Mr Harry Greenwood, Conservative MP for Belling North, said that the proportion of the Prison Department's budget that went on education had fallen from 2.3 per cent in 1979-80 to 1.85 per cent in 1984-85.

Mr Terence Platt, a spokesman for the department, said this was because of the large unexpected increase in the prison population last year, and because more money was being spent on providing more buildings and prison officers.



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(179)

The build up to May's local government elections went a stage further this week with the Conservatives pledging to put education top of the agenda and also publishing their manifesto for recapturing the ILEA. Mike Durham reports

Tories declare war on indoctrination

With customary vigour, party chairman Mr Norman Tebbit launched the Conservative election campaign by claiming Labour had made London an "education-free zone" and that children were "voting with their feet" by playing truant.

His remarks were an initial salvo in what promises to be a red-blooded battle for control of the Inner London Education Authority, facing direct elections for the first time as a single-purpose local authority.

Election day is May 8, and the campaign proper will begin in early April. Until then a war of attrition will take place as the parties try to score points and make their presence felt.

Two of the three main party manifestos have now been published. The Liberal/SDP Alliance launched its manifesto, *Working Together for London's Children*, last month. Labour's will not be published until early April.

The 15-page Tory manifesto, *Pupils Before Politics*, unsurprisingly stresses the traditional Conservative values such as parental choice, tough discipline, value for money and a no-nonsense back-to-basics curriculum.

At the same time, it launches a savage attack on Labour's controversial approach to management and the curriculum, promising a heady ideological battle in the weeks to come.

Norman Tebbit's broadside this week was only a beginning.

On politics, the Conservatives say they will stop "indoctrination" in the classroom, oppose subjects like peace studies, and welcome the police into schools. They will put a stop to "all the

sexist nonsense" pouring out of County Hall.

Teachers want to get back to basics. Under Labour, "all kinds of rubbish have been introduced into the school timetable: racist studies, sexist studies, gay studies, 'peace' studies, party politics."

It is a familiar litany, but only on one specific point does the Conservative manifesto offer its own alternative policy statement - on the real and

sensitive issue of race.

The Tories say they will promote the teaching of English to ethnic minorities as a first language. "We will provide equality of opportunity to the children of the minority communities."

"Teaching English as a second language to these children will make them second class citizens. English is their first language or it should be."

The manifesto devotes one section to the idea of developing some secondary schools as "centres of excellence", particularly in science and technology. Classics could also be promoted in selected schools.

Aspects of the school system designed to appeal to middle-of-the-road parents include an emphasis on parental choice and the right to send children to Church or Jewish schools.

Discipline is another traditional plank to the manifesto. So is dress. "We believe that extravagant modes of dress and behaviour have no place in a good school."

With the ideological battle lines drawn between Labour and the Conservatives, the SDP-Liberal Alliance approach is clearly designed to draw off support from both sides.

It has attacked the "politicization" of education in London under Labour, and promises to end disruption in schools by left-wing teachers, the "pestering" of teachers with political initiatives, and the waste of money on bureaucracy.

Labour will continue with its policy for equal opportunities and despite the fact it has drawn from both rival parties it will solidify on with its anti-racist, anti-sexist approach. Indeed, it will harden it up.

There has been some internal dispute over the means of drafting the Labour document, but it is now said to be complete and ready for printing. Some groups complained at lack of consultation.

New equal opportunities policies will apply to governing bodies and non-teaching staff in schools, as well as the structure, staffing and curriculum of the teaching service itself.

Conservative candidates include Lady Olga Maitland in Holborn and St Pancras, a safe Labour seat. Among those not standing, or not yet selected for a seat, are Opposition leader at the GLC, Alan Greenhouse, Patricia Kewman and former Conservative leader, Professor David Smith.

At least 23 Labour candidates are existing ILEA members, but there could be some significant changes. Among those not standing, or not yet selected, are Ruth Gee, Bob Crossman and Margaret Morgan, all leading

members of the Labour group.

Mr Ashley Bramall is moving from Tower Hamlets constituency to Putney, where he could face a strong Conservative or Alliance challenge. His place in the East End borough has been taken by a black woman candidate, Gean Bernard. Frances Morrell, the authority's leader, is contesting Islington South - her GLC constituency.

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Generation of pupils 'could be wiped out'

Conservatives made it clear at their local government conference last weekend that they would be putting education high on the agenda in this year's local elections.

Councillors and candidates made it plain that they wanted a higher profile for education policy and more Government intervention.

Sir Keith Joseph heard a litany of complaints from councillors about the "politicization" of the service, and appeals for the Government to step in to solve the teachers' pay dispute.

Star of the show was undoubtedly Mr Hugh Neil, son of Ambrose Neil - the controversial black Brent councillor who two years ago defected from Labour to the Conservatives and changed the political balance of the authority.

Mr Neil, aged 23 and a company director, complained bitterly about teachers being "allowed to propagate extremism" in schools, especially in the context of the teachers' pay dispute. A whole generation of pupils was in danger of being "wiped out", he said.

Students were bitter because they felt the Conservatives offered them no help, because they were not highly thought of, and because their lives had been "ruined" as a result.

"There are students on the dump heap, and regrettably there are a lot of ethnic minorities among them, who are being hammered every day as they go into their lessons by extreme left-wingers trying to stop them from getting an education," Mr Neil told Sir Keith.

A similar theme was taken up by north London prospective candidate Ms Judith Chapple, who complained about the "language of racism

and hate" brought into the classroom by anti-racist teaching.

Sir Keith responded saying there was under-achievement among all races in schools. He said pupils and parents had a duty to report evidence of biased teachers. "If you make vague allegations nothing will come of it."

However, he did invite Mr Neil to "see him afterwards".

With negotiations over the teachers' pay claim in mid-flow, Sir Keith was unwilling to commit himself. But local authority councillors were not short of advice.

Bracknell district councillor Mr Alan Ward, an NUT member and a teacher for 27 years, denounced the NUT leadership as every bit as intransigent as Mr Arthur Scargill. But he warned the Education Secretary that teachers were determined and meant business.

"We must have no illusions. We have to be aware that Fred Jarvis (NUT general secretary) has in many ways won the argument with his members," Mr Ward said.

In his own school, 18 teachers had voted for continued strike action. "They are not raving loonies and many of them are Conservative voters," Mr Ward called for the Government to regain the initiative over the negotiation and restructuring of teachers' pay.

Dr David Muffett, the outspoken education chairman from Hereford and Worcester, said nothing would guarantee the Conservatives' victory in the May elections more than a settlement of the teachers' pay dispute. He urged Sir Keith to step in.

Burnham is dead, CLEA (the Council of Local Education Authorities) is dead. The sooner they are both buried the better," he declared.

Mr Neil said he was determined to see his school through to the end of the year.

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Spikey problem

In the Socialist Educational Association, where hope springs eternal, they are pursuing another hopeless cause. The SEA has just written to the Advertising Standards Authority in no mean terms to complain about the "false impression" being purveyed by the current television ads for the two-year YTS.

You know the ones, with a bunch of streetwise kids being enticed indoors by some unusually welcoming small businessman.

Had they known of it, the SEA might have gone on to complain about the false impression being put about by Spikey Dadda. Spikey is, of course, the teenage school-leaver in the linked adverts in national newspapers. Local MSC officials in north London are said to be upset because they have discovered that far from being a YTS trainee, Spikey is in reality 18-year-old Darryl Middleton from Kenton, who is embarking on what promises to be a lucrative modelling career.

But why is the SEA pursuing a hopeless cause? Because they have written to the wrong people. The ASA does not even consider complaints about television advertising - that's the job of the IBA.

From seven to 13 Justine had private tuition from a teacher specializing in dyslexia. "I was helped by being provided with material that used bright colours and large words and my teacher taught me memory tricks for remembering spelling," said Justine.

Words such as February were learnt by mnemonics - "Feb-r-u-a-rat? Yes."

At her school, King Alfred's in Hampstead, she had to sit at the front of the class. Any extra English had to be done during art or tennis. "I was never allowed to miss an academic class, I had to miss lessons I enjoyed," Justine occasionally accused her of being lazy and of using her dyslexia as an excuse.

Justine is now re-taking four O levels plus an O level in computing at

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When reading need not be a closed book

Geraldine Hackett hears some success stories among dyslexic pupils

Justine Carlson remembers that "vase" is spelled with an "e" at the end, by picturing a flower vase being propped up by the letter "e".

Over the years she has built up a library of mental images that help her to cope with the problems she has as a dyslexic in spelling even simple words.

Sixteen-year-old Justine's proudest achievement is her O level in geography. She told headteachers attending a one-day conference in London, organized by the Helen Arkell Dyslexia Centre, that she had been told she would not be able to achieve some academic goals.

"The reason why I passed my geography O level was because teachers said I wouldn't be able to do it - I was always being put down," she said.

She was diagnosed as a dyslexic at the relatively early age of seven. Her older sister is also a dyslexic and Justine was examined by an educational psychologist at the same time as her sister.

From seven to 13 Justine had private tuition from a teacher specializing in dyslexia. "I was helped by being provided with material that used bright colours and large words and my teacher taught me memory tricks for remembering spelling," said Justine.

Words such as February were learnt by mnemonics - "Feb-r-u-a-rat? Yes."

At her school, King Alfred's in Hampstead, she had to sit at the front of the class. Any extra English had to be done during art or tennis. "I was never allowed to miss an academic class, I had to miss lessons I enjoyed," Justine occasionally accused her of being lazy and of using her dyslexia as an excuse.

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NUT asks for more evidence in DES guidelines

Head lice linked with AIDS

by Hillary Wilce

Head lice - which are widespread among schoolchildren - could become carriers of the AIDS virus, according to a controversial new theory about the transmission of the disease.

Dr Danny Connolly, a psychologist at the Human Factors Centre, in London, says there is considerable evidence to suggest that blood-sucking insects, such as a head louse, may play a role in transmitting the acquired immune deficiency syndrome (AIDS) virus.

His theory is hotly disputed by many AIDS experts. But because the evidence is confused, the National Union of Teachers is urging the Department of Education and Science to include a section on parasitic insects in its forthcoming booklet on AIDS for parents, teachers and governors.

The NUT is also asking that the booklet contains the new evidence that has emerged on the possible ineffectiveness of heat-treating blood supplies, so that it can be taken into account when the position of the number of haemophilic children who are likely to be in school in the future is discussed. It also asks for the official advice on AIDS to be regularly reviewed.

Overall, the NUT supports the DES view that a child with AIDS antibodies

should continue at school, but says extra staffing and resources should be provided in such circumstances.

The booklet is due to appear this spring. A spokesman for the DES said emerging medical evidence would be examined closely as the final draft on the booklet was written.

● A haemophilic boy attending Treales primary school, Bridgend, Wales, has become the first known child AIDS carrier, writes Iola Smith. The boy has not yet developed the AIDS syndrome, however, and Mid-Glamorgan education authority says that he poses no threat to other pupils.

But to reassure parents, a meeting has been scheduled so that the director of education, Mr Ken Hopkins, and Professor Arthur Bloom, consultant haematologist of the University Hospital of Wales, can answer questions about the disease.

Following DES guidelines on AIDS which state that "such children should be allowed to attend school freely and be treated in the same way as other pupils", the boy has been allowed to continue at Treales primary. An extra nursery nurse has been appointed to work at the school. Unlike the Hampshire case last term, there has been no outcry from parents or mass withdrawals of children from the school. Mr

Hopkins pointed out that when the school reopened after the half-term holiday, the attendance figures were normal. And no parent has complained about the child being allowed to stay on. However, parents were concerned about the effect of the diagnosis on the child himself.

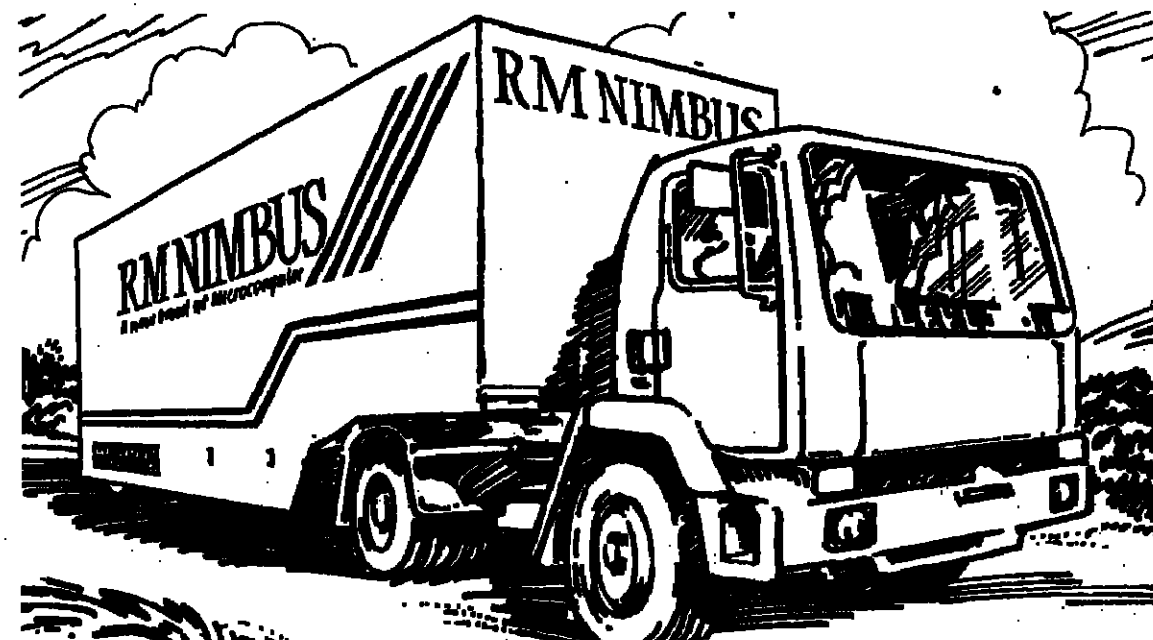
Although the boy was detected as a carrier in December, the school and I.e.a. were not aware of the fact until this month. Teachers, all of whom are NUT members, and ancillary staff have given their full support to the council's policy.

● The case of another child carrier came to light last week.

In Gwent, a 23-year-old teacher went to help an 11-year-old haemophilic bleeding profusely. After this incident, the boy's parents admitted that he was an AIDS carrier.

The teacher cut her hand when attending the boy. However, Dr John Clarke, Gwent authority medical officer, considered the risk of infection to be "minimal".

The teacher concerned has been offered a test to establish whether she has been infected. However, as the test results are not reliable until a two-to-six-week period has elapsed since contact, she will have an anxious wait.



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To reserve your place, phone Sheila Lester on Oxford (0865) 249866.

Sarah Bayliss reports on the turmoil inside Britain's only primary association

Resignations highlight NAPE conflict

Two national officers have resigned from the National Association for Primary Education, unhappy with its direction and dissatisfied with its lack of progress.

The resignations of the treasurer Mr John Nichol, a solicitor, and parent and of the membership secretary, and Mr John Gawthorpe, a deputy head, have raised questions about NAPE's limited success in attracting and keeping parent members and its ability to reflect grass roots opinion.

The financial and administrative agonies of a small, unopposed charity with hopes of establishing a public partnership between parents and teachers, are also highlighted by the resignations.

John Coe, NAPE's chairman, whose three-year term of office ends in two months time, said he resented a newspaper probing into a "private affair".

"We have kept no secrets from members but this is not a matter of public interest for public dissemination," he said.

However, Mrs Joan Lister, who

steps into the chair at the annual general meeting on April 26 said: "Knowing them as I do, I understand that they have both become frustrated. Their high ideals have simply not materialised as quickly as they would have liked."

The resignations, she explained, represented "teething troubles" similar to those of any new organisation struggling on limited funds and using an ad hoc administration "entirely dependent on volunteers".

Correspondence obtained by *The TES* shows remarkable strength of feeling behind the resignations, although both men fully intend to remain active members of their local branch in Hampshire.

Both express deep concern that parents still make up less than 10 per cent of the national membership.

Since NAPE was formed in 1980, numbers have grown from 1200 in 1981 to around 2,500 in 1985. Last year 930 members failed to renew subscriptions and four out of every ten of those had belonged for only one year.

John Gawthorpe in a letter to John Coe after Christmas wrote that: "Having discovered parents a little late in the day it (NAPE) has done so little to involve them and provide for their needs".

In another acrimonious letter to fellow council members Mr Gawthorpe writes: "Our notepaper boasts our claim to be a partnership but for many of our members this is the only evidence they have to prove it. We have not shaken off the 'teacher professional' outlook and image - indeed I know there are those of you who feel that it was foolish ever to try."

He says two other members of NAPE's national council have left for personal reasons but, like him, they have "a deep sadness at how little progress has been made".

Mr Mike Brodie told *The TES* he had left the national council last summer because of new professional commitments as an Oxfordshire adviser but added: "Even if we attract a 20 per cent parent membership, we are still not doing very well."

Mr Gawthorpe writes that a further cause for his dissatisfaction is over the national council's relationship with members; policy making seems to come from the chairman at the top and has been pushed out of ordinary members' reach.

His resignation letter says he looks forward to the AGM "not in the anticipation of a series of petty wrangles but in the expectation that the membership will give their view as to what kind of organization they want."

Mr Nichol has told members that he can no longer look to the chairman for support. He also told council members that NAPE "badly needs to get its act together and finally sort out administration and finance."

This week Mr Nichol emphasised his commitment to the original aims of NAPE and said he believed it could still become very effective.

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Mr Gawthorpe said: "I hope NAPE

grows without us but it's for the members to decide what kind of organization they want."

Mr Coe, a lecturer at London University's Institute of Education, confirmed this week that negotiations with two educational trusts were at a promising stage. The trusts were particularly interested in developing the partnership with parents.

Mrs Lister said decisions had been taken in the past two months which showed NAPE was well aware of its own difficulties and the need to involve parents more.

"I think it was inevitable that the starting point of an organization like this was with teachers but we are moving forward. It had to grow from somewhere."

She said that once NAPE had a national base and some paid administrative help, many problems would disappear. "I am very optimistic because there is some terrific work going on at local level. If it can happen locally it can happen regionally and it must happen nationally."

Mr Gawthorpe said: "I hope NAPE



Mr Giles Radice, shadow education spokesman, is pictured above with pupils at Harwood school in Fulham - which he visited on Monday as part of a whistle-stop tour of the area with Mr Nick Raynsford, prospective Labour party candidate in the forthcoming Fulham by-election.

Yorkshire research shows 'pairing' lifts reading age

By Sarah Bayliss

Children who partner their classmates in the learning technique known as paired reading improve their own performance considerably, according to new research.

Information collected by psychologists in Kirklees, Yorkshire - home of the most advanced paired reading scheme - shows that children who act as tutors to their peers increase their own reading ages by as much as, if not more, than those they are helping.

"Peer tutor projects therefore afford a double benefit," states the second annual report of the project which is funded by urban aid with £17,000 over five years.

The report reveals an increasing number of "tutors" who are not the natural parents of the child who needs help with reading. In the past year, four projects in Kirklees schools have begun to use other children of the same age as paired reading tutors. Four others have used older children and three have used adult volunteers.

During the year, 48 new projects were begun with the majority - 30 - starting in the spring term and numbers then falling progressively.

By comparison, the numbers for spring show that only 10 new projects are expected to get off the ground. The effects of teacher action had

been severe, both on new schools starting their first projects and on schools which learnt how to run projects in 1984 and proceeding to run further schemes independently, says the report.

Other developments include the increasing tendency for projects to be run in secondary schools and for new projects to involve mixed ability or high ability readers. Most children are still below average ability in reading but this fell from 86 per cent in 1984 to 74 per cent in 1985.

During 1984 and 1985, more than 1,250 children aged 5-14 were involved in new schemes and their results "confirm the consistent impact of the paired reading technique".

Children improved their reading at an average rate 3.8 times the normal gain in reading accuracy and 4.7 times the standard for comprehension. Follow-up results show that in the

short term - three months after projects ended - children's reading continued to improve at above normal rates.

In the long term, "results indicate that the advantages accruing to paired reading children over non-paired reading children are maintained and do not wash out."

Data on the relative effectiveness of parents, peers and volunteers as tutors, indicate that parents produce the best results - their children's reading ages improve by 3.9 times the normal gains.

Peer tutors achieve the next best result (3.1 times normal) and adult volunteers the least spectacular - but still considerable - gains (2.3 times normal).

A training pack put together in Kirklees is still in heavy demand - 480 requests have been made, some multiple orders, over the last two years - and packs have been sent as far as Nepal, Barbados and Australia.

Safe Houses

The address of the Safe House Parent Scheme (TES February 21) is 8 St Peters Close, London SW17 7UH, not SW11 as printed.

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CONTROLLING COMPUTERS

Mike Bostock explains why it's not a one-way system.

One of the most exciting growth areas in the field of computer education is the use of a computer to control models and structures of one kind or another. Interest in this subject has followed a growing recognition that computer control can provide many of the useful ingredients that can contribute towards broad-based awareness courses in Information Technology.

This would include the development of skills associated with practical problem solving activities and an understanding of how IT functions and is used in the real world.

It is likely too that some career elements would be built into such courses, perhaps wishing to reveal how particular school subjects can contribute to broad areas of human experience, or in encouraging a child to gain a feel for what it actually is that an engineer, systems analyst, data processing manager, etc, does; all of

these being terms that probably mean very little currently to the average third former contemplating options. In industry Year this particular aim would seem to take on a special importance.

One successful course already contributing to IT awareness in many schools is the MEP Microelectronics for All package, and another integrated package soon to enter this important area of the curriculum as a resource for awareness level Information Technology courses is *Programmable Systems*. This package was developed as a cooperative project between MEP, British Schools Technology and the LEGO company of Denmark, who produce the Technic range of educational construction kits.

Programmable Systems is a complete package of courseware containing a special kit of LEGO parts that includes motors, gears and a special multi-function optical sensor, a manual switchboard controller, a computer interface and a specially developed computer program. Also included in the package is a teachers' guide and booklets for the student that guide activities and present helpful ideas.

Programmable Systems is a structured 20 hour course designed to develop skills associated with technological problem solving, and an understanding of how software logic can be used to make "intelligent" systems operate. In its approach the course draws together the important areas of design, technology and software logic in activities which involve the construction and operation of models of programmable systems of one kind or

another. These activities are 'task-led', the aim being, not to make a particular model, but to use the LEGO materials and the computer to solve particular systems problems. Among the examples suggested, and which have been successfully used in the trials schools, are included various vehicles, washing machines, a simple robot arm, a brick sorter, and automatic doors and barriers.

The emphasis in *Programmable Systems* is on using a computer as a natural tool, like any of the other resources used in the course. In this respect introducing the computer follows on naturally from earlier activities based on the use of the manual controller where the student will take the role of the computer and 'live out' the control problem step-by-step.

The computer program used, called *LINES*, has been designed to reflect the way that a child is encouraged by the materials to think about the control problem as a series of lines of switching operations that can turn, for example, motors and lights on and off. Using *LINES* simple control programs may be built and tested rapidly with no previous knowledge of programming.

Outside of the realm of microprocessors, conventional electronics or microelectronics may be used for control, and is often the best solution to a simple problem. A computerised bite indicator for a fisherman is absurd when the same function can be performed by a trembler switch and a simple electronic buzzer.

Unfortunately the principal source of practical information is the wide selection of hobbyist magazines and large collections of these are held in some CDT departments to act as an ideas stimulus and a source of useful circuitry. They give complete design and construction details for particular projects and, human nature being what it is, students often attempt to lift a complete piece of work, subject it to cosmetic surgery, and present it as a design.

This can cause all sorts of trouble, not least the impossibility of trying to trace a fault in a circuit which the student only dimly understands. Ethically, of course, the practice is indefensible but many students who start out researching problems find that there are no suitable reference works, only complete solutions.

SEDC has produced a publication which was eventually called *The Book* (described below) after all attempts to find an inoffensive title had failed. The organisation of this work is deliberately somewhat rambling so that the student cannot use it as a recipe book, but rather is forced to read through a section which will give several possible ways of doing something and create a situation in which an evaluation and choice must be made. Care is taken to explain the workings of each circuit, the pitfalls which may arise in construction and use, and the troubleshooting techniques which can be used.

In particular, the time and effort needed to write the program means that there is too little of either remaining to develop a complete microcomputer and interface to a CDT design and so single-board controllers, consisting of a microprocessor and interface chips, are more commonly employed in dedicated applications. Most of these microcontrollers are programmed in machine code, a task which is certainly not for the novice, and this limits their use.

In the use of a powerful conventional microcomputer, such as the BBC micro, presents difficulties in the area of control, particularly when complex tasks have to be accomplished in real time. Again it is often the programming which causes major problems, requiring skill levels beyond those of the student of computer studies at 16+.

SEDC has developed a range of three control boards which need only simple instructions in BASIC to accomplish very significant functions so that, for example, it is only necessary to specify an angle in degrees to cause a servo unit to turn to that angle; programs to do this have existed for some time, but involve the student in somewhat cryptic calls of complex code.

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Electronics as a design resource in CDT

The major problem for most teachers running modern CDT courses is project work. It is this area which highlights the difficulty of any design based course, namely that the teacher cannot possibly have the range of knowledge or skills necessary to deal with the variety of techniques which may be employed by a class of some twenty students each engaged in an open-ended design activity. This is not simply incompetence, simply the limitations of a normal human being.

One of the options which must be open to the student is the use of electronics. It is not the only option, and the good teacher will encourage exploration into other areas of control, but the fact remains that it often presents the most efficient and cost-effective solution to a design project.

Electronics design resources must be directly accessible to the student, and must be in a form which can be comprehended by the 15-year-old who will not necessarily have covered even the basics of this aspect of CDT before being called on to employ it in design work. To this end the Sunderland Electronics and Control Development Centre (SEDC) have been engaged on a programme of production of materials relevant to the needs of CDT.

Microcomputer control is important, but it is not usually possible to build a complete microcomputer and interface to a CDT design and so single-board controllers, consisting of a microprocessor and interface chips, are more commonly employed in dedicated applications. Most of these microcontrollers are programmed in machine code, a task which is certainly not for the novice, and this limits their use.

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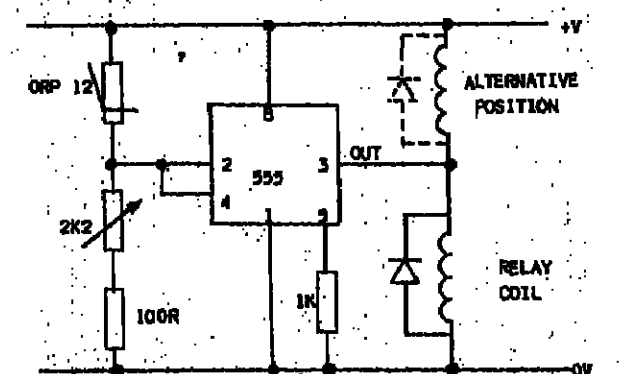
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A PRACTICAL LIGHT OPERATED SWITCH

The Schmitt trigger function is provided by an integrated circuit timer, the well-known 555 used in a slightly unfamiliar configuration.



Jill Sherman reports a conference of senior teachers, education officers, doctors and social workers on ways to prevent ill-treatment of youngsters

Deputy urges anti-child abuse classes

Teachers have been urged to recognize that they can influence the pattern of child abuse in the next two generations.

Mr Peter Maher, deputy headmaster at Langdon school, Newham, east London, told a conference on child abuse, organized by the National Association for Pastoral Care in Education: "It is indisputable that parents who will be child abusers are currently sitting in our classrooms."

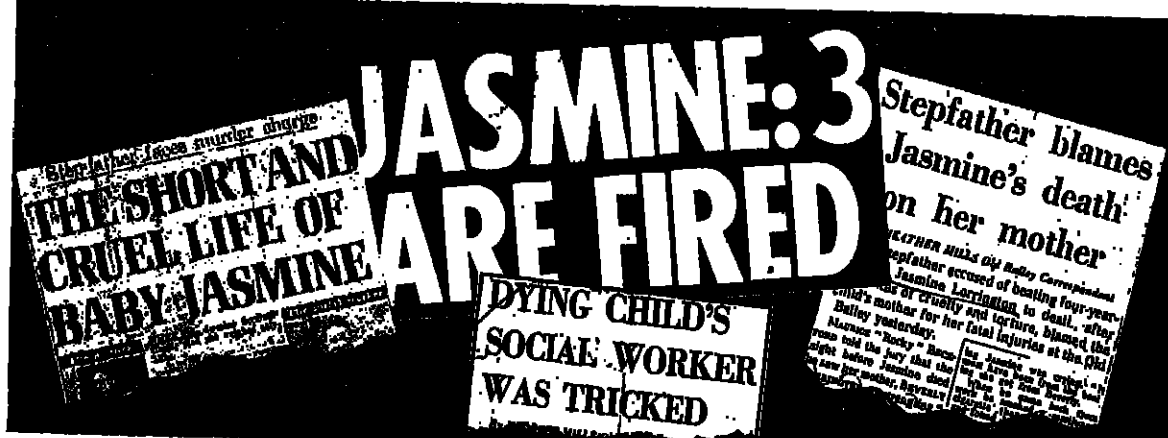
He added that present school thinking about child abuse was still at the primitive level of watching children in showers and looking out for bruises. It was high time for a direct input into the curriculum which would lead to less abuse in the future.

The conference, at the National Union of Teachers' training centre in Stoke Rochford, Lincolnshire, brought together social workers, education welfare officers, paediatricians and teachers to discuss how child abuse should be tackled and prevented.

Mr Maher stressed that some teachers still saw their task as fillers of empty vessels: "A significant proportion of teachers do not understand that they have a caring element to their role at all, and maintain that this is not their responsibility."

He said that, although the report following the death of Maria Colwell in 1974 was highly critical of education services, there had been little change during the last decade in ways that schools coped with child abuse.

"The general level of awareness is



minimal and attitudes are worryingly complacent, Mr Maher said. "It is not unusual to find local authority guidelines on procedures in cases of suspected abuse, filed neatly and uselessly in the headteacher's study."

Teachers could prepare children for the circumstances which might lead to ill-treatment and give them strategies to make it less likely.

Helpful material included a training programme produced by Kidscape or the video *Kids Can Say No*. But he warned that teachers had usually not been trained to use these materials and should be properly prepared to be confronted with disclosures of sexual abuse.

Professor Richard Whitfield, a former director of child care (UK) at the Save the Children Fund, argued that

some child abuse, including the most severe, was preventable given prior learning about good child care practice.

This knowledge should not be reserved for a minority of actual or future parents who might be perpetrators, he said, but should be available for all prospective parents.

Parenthood should be seen as an option which could be declined without losing self-esteem. "The prevention of child abuse must contemplate less parenthood and without stigma," he said.

He disclosed that in the study he had directed at Aston University, some schools had excluded controversial topics about personal life from the curriculum because of the dilemma they presented for teachers.

The cases of Maria Colwell (right) and Jasmine Beckford: Little change in the past decade



Pastoral policy plea

Teachers, education officers and doctors at the conference called on Sir Keith Joseph to ensure that local education authorities included policies on pastoral studies when they submitted curriculum guidelines.

Mr Andrew Lockhart, the director of education in Newham, east London, said the new Education Bill, on its way through Parliament, asked local education authorities to issue and publish policy guidelines on the curriculum.

"We should put what pressure we can to ensure that such policy statements cover not just academic but also pastoral curriculum," he said.

The prevention of child abuse any more than drug abuse or parenthood, said Mr Lockhart. It should be included in the school curriculum within a cluster of social, personal and health education.

The structure for teaching these personal skills should be made more flexible within the schools which at present were frustrated by the uses and abuses of the Burnham point system.

Dr Colin Stern, a consultant paediatrician at St Thomas' Hospital, London, proposed the setting up of a separate parliamentary committee or ministry charged with responsibility for the child to ensure some cohesion of policies between education, social services and health departments.

In brief

Effective schools

A grant of £60,000 to study the organization and management of secondary schools has been given to the University of Manchester Institute of Science and Technology by the Economic and Social Research Council. The work will include the secondment of teachers to the project, and will aim to produce materials which can be used by heads and other school managers to analyse the effectiveness of their organization and management procedures and will start in 1986. Training books and courses will also be produced.

High fibre

Dyfed's school meals service is introducing high fibre diets throughout the county from this week. Fat, sugar and salt will be reduced and wholemeal bread, salads and jacket potatoes will be served instead of chips. More vegetables will be offered, fruit and yoghurt as desserts.

Pay rise

Academic staff in colleges of education in Northern Ireland have been awarded a 2 per cent pay increase backdated to December 1.

Career plan

A £159,000 contract for the first stage of a three-year programme to develop a computer-based career guidance service for higher education students has been signed by Sir Keith Joseph, the Education Secretary.

The contract brings together the computer services company, Secon Ltd, Queen Mary College, London, and the University of London Careers Advisory Service. Both the University Grants Committee and the National Advisory Body for Public Sector Higher Education are contributing towards the overall cost of the project, which will total £630,000 over three years.

Salford cuts

Salford education authority has agreed education cuts of £1 million at a special budget meeting. The reductions will mean the loss of 110 teaching jobs, a 5 per cent increase in primary pupil-teacher ratios, and more expensive school meals.

Parents' places

Richmond upon Thames has decided to offer two places on the borough education committee to parents of pupils at a council-maintained school, or attending the borough tertiary college. The plan now goes before Sir Keith Joseph, the Education Secretary.

Advice link

The Association of County Councils has welcomed the consultative paper on local authority advisory services prepared jointly by the Education Department and I.E.A.s. But it warns that changes recommended in the paper cannot be made without more resources.

The Council for Educational Technology has called for an electronic information link-up between advisors so they can share information and experience. An electronic "invisible college" would be particularly useful because of the impact of new technology on the curriculum, CET says.

Discipline study

The Northern Ireland working party on corporal punishment in schools has invited submissions from a wide range of interests, including parents, after its first meeting. The working party was appointed by former Northern Ireland Education Secretary Mr Nicholas Scott to look at school discipline with particular reference to restrictions in corporal punishment.

TES reporters examine the difficulties faced by three local education authorities as they try to steer controversial school reorganization schemes through "hung" councils

OXFORDSHIRE

Pressure is mounting for an independent inquiry - perhaps led by a member of Her Majesty's Inspectorate - into the future of Oxford's six comprehensive schools.

Rows over reorganization that have soured relations in the city for months show no sign of ending despite a decision by Oxfordshire education authority to do nothing but alter the number of pupils allowed into each school and direct co-operation between the institutions.

Now there are calls for an impartial outsider to lead an investigation, shared with local politicians, into the conflicting arguments for change (the need to ensure standards as rolls fall) and for maintaining the status quo (a wide range of schools, including single-sex and Church).

The six schools that are affected are Cherwell, Cheney and Peers (all co-educational), girls-only Milham Ford, boys-only Oxford school and the joint Roman Catholic/Church of England St Augustine of Canterbury.

Anyone leading a dispassionate examination of the alternatives - and there are 46 of them - needs the combined talents of a statistician and diplomat.

But there are some who doubt that the introduction of an expert would really ease the tension which caused friction between communities and led to bitter divisions within the two local Labour parties.

A number of options have been thrown out during months of ill-perceived public meetings and long council committee sessions. They include:

- Scrapping single-sex education and keeping four co-educational schools;

Wanted - one impartial peacemaker

- Keeping single-sex educational wings in two of four new co-ed schools; and

- Turning five of the six schools into two large split-site "collegiate" comprehensives, and keeping all the buildings, to run alongside the smaller Church comprehensive.

Mr Tim Brighouse, the county's chief education officer, suggested at first that the authority should keep all six 13-18 schools that form the top tier of the city's three-tier system. Perhaps he realized that there would be great difficulty in getting consensus in a hung council on anything else.

And so it proved. The Alliance (18 members strong) remained united behind the plan to cut the number of schools from six to four.

The Conservatives, with 31 seats, who at first seemed keen to retain all six schools, wavered and toyed with the collegiate school option before settling for little change.

But the 20-strong Labour group, with its power base in Oxford city, agonized most. First it wanted more work on the collegiate school idea, then went for four schools (but retaining single-sex wings, and then settled for keeping all six schools.

Meanwhile, what Mr Brighouse regarded as a key ingredient in maintaining standards in all six schools was dropped. He had said that a minority studies centre, to support teaching groups too small for survival in individual sixth-forms was as essential as increased co-operation lower down the schools.

Councillors balked at much of the extra cost this would entail since there is already unease in rural areas as secondary school sixth-forms come under threat because of falling rolls. Instead, a new director to co-ordinate 16-19 education in the city is to be appointed for two years.

Lower admission limits were im-



Tim Brighouse: Key part of his plan was rejected

posed on schools to try to ensure a spread of pupils around the city. Yet guarantees were made that no one would be forced into a co-educational school when their parents wanted boys-only or girls-only schooling, no pupil would have to attend a single-sex school when parents had opted for co-education, and no child would be made to go to a Church school.

But this has infuriated parents who want to get into a particular co-ed school since they will all be in competition, while families opting for single-sex education or schooling at the joint RC/C of E school are sure of a place.

The county education committee is therefore going to look at the position

again on April 24 after parents have made the choice of upper schools for September.

Supporters of the single-sex schools are naturally sick-a-hoop. They argue that all six schools can survive the crisis of falling numbers and that the debate has caused unnecessary alarm in a city which has already suffered more than its fair share of closures.

But others say failure to act is simply putting standards at risk.

Education officers forecast numbers in the upper schools will fall from 4,370 last year to 3,400 in 1991 before the worst is over and slow recovery starts. But none of Oxford's upper schools could be considered big and there is room for building if necessary.

Quarrels over the significance of statistics have led to calls for an inquiry. Dr Harry Judge, director of Oxford University's Department of Educational Studies, and a co-opted member of Oxfordshire education committee, first made the suggestion last month.

In the past few days, Mr Inn Inness, a parent-governor at Peers School, has been trying to drum up support for an inquiry led by an HM Inspector. He said: "If people don't believe anyone locally, why don't we get an independent person who has got clout to come and look at our schools and say either 'There is a difficulty' or 'There is no problem, pour in a bit of money and it will be all right'."

Meanwhile, county councillors, bruised and battered by conflicting loyalties, are quietly meeting behind the scenes and hoping for a compromise that will avoid the open warfare of the past six months.

James Meikle

Councillors poised to end selective schools

DEVON

Alliance and Labour councillors in Devon are likely to seize the opportunity to end selective schooling in west Plymouth following a decision by the Education Secretary, Sir Keith Joseph, to reject a two-year-old Conservative reorganization plan.

The original scheme, put forward when the Conservatives controlled the county, would have created four new comprehensive schools but kept three out of eight grammar schools in the western part of the city.

This week a working party met to consider the options available. Both Alliance and Labour have stated they would seek to close all the grammar schools and go fully comprehensive.

Devon is now a hung county, with an Alliance administration supported by

Labour. An Alliance proposal to end selective schooling throughout the county is to be tabled at the county council next week.

Mr David Morrish, Alliance leader, said: "There have been enough interim solutions proposed for west Plymouth. What we can now do is move forward to a fully comprehensive system for the whole city." Labour education spokesman Mr David Knott said: "I would think we will take the opportunity now to do away entirely with selective schooling."

Sir Keith turned down the Conservative scheme after two years' delay because he ruled there had been a lack of public consultation over the closure of one school, Whitleigh modern. Of course, any proposed comprehensive scheme would require consultation and Sir Keith's approval.

Mike Durham

Parents take I.e.a. to court

BERKSHIRE

Berkshire parents are taking the county council to court for allegedly rustling through a plan to extend selection throughout the county without proper consultation.

A High Court judge has granted the parents leave to apply for a judicial review of the county's decision, taken on November 9, to extend the catchment area for Reading's two grammar schools from this September.

Parents, teachers and governors are fiercely opposed to the scheme, believing it will rob successful comprehensives of their brightest pupils and lead to the reintroduction of the 11-plus.

Now parents from three comprehensive schools and one primary are seeking to have the decision quashed on two grounds.

First, they say the council should have waited for a ruling from Sir Keith Joseph on whether the changes were "significant". If he had ruled that they were, the county would have had to go

through a full consultation procedure, and parents would have been able to submit objections.

Second, they complain that parents were given full details of the changes only one month before they had to submit applications for schools, whereas the school regulations stipulate they must be given six weeks.

Berkshire first raised the idea of extending the selection net beyond Reading two and a half years ago, because falling rolls meant that the two grammar schools were absorbing an ever-increasing proportion of the town's bright pupils. But the plan was defeated in full council because the Tories did not then have overall control.

Last May, however, the Tories won control of the council and hastily resurrected the scheme. Heads and governing bodies were given just over two weeks at the end of the summer holidays to comment on changes to be introduced this autumn.

Biddy Passmore

Children are more likely to disclose sexual abuse to teachers than anyone else, Mrs Helen Kenward, a professional staff officer with Northampton social services, told the conference.

Teachers were unique in understanding the developmental needs of children and knowing about normal growth and behaviour. "Children may feel no one would believe them. They need to learn how to tell and how to tell and to keep on telling till someone helps," she said.

Reported incidents of sexual abuse had risen substantially in the last four years and it was now estimated that one in 10 children were sexually abused - though some professionals put the figure even higher.

Although figures from the National Society for the Prevention of Cruelty to

Children showed that the average age of these victims was 11½, there were now reports of an increase in the number of babies who had been sexually abused.

Offenders were from every class, creed, race and profession and most were abused as children, said Mrs Kenward. The children usually knew the offender.

There also seemed to be a disturbing increase in young offenders. Mrs Kenward cited a study in Nottingham where 30 per cent of 225 offenders who had abused children sexually were under 18.

"We have a real problem about what young people are doing and how they are enacting their feelings," she said.

Michelle Elliott, director of Kidscape, a training programme on abuse prevention, said there was evidence

that young offenders experienced a feeling that they wanted to act in this way at the age of 13 or 14, but did not do so for another year.

Mrs Kenward emphasized that once a child disclosed sexual abuse, it was vital not to back off. There was a need to feel the adult would hear and share the pain. At the same time, the child had to be protected and the abuse stopped.

"No one should make promises they cannot keep and it is often better to say you don't know or are not sure than to give an enigmatic answer which you can't back," she said.

All children should be taught safety skills, involving accepting lifts, being alone at home, going off with someone, bribery and threats active or implied. "They need to know how to say 'No' and how to get away."

British Council looks for a new leader

by Biddy Passmore

The British Council, the body responsible for promoting British culture overseas, is looking for a new director-general.

The present director-general, Sir John Burgh, retires in the summer of 1987.

Candidates for the £55,000-a-year post must prove themselves equal to the challenge of running an international organization with staff totalling 4,200 and a total annual budget of

more than £200 million. "The director-general needs to be a fluent communicator to win the confidence of government, academia, industry, the arts and last, but by no means least, the media," says the Council. And candidates are warned: "A cast-iron constitution and a strong stomach are essential to survive punishing overseas travel."

Sir John Burgh, who is 60, has been director-general of the Council since May 1, 1980.

Standards met

A second list of institutions which have been accredited by the British Accreditation Council for Independent Further and Higher Education has just been published. The BAC monitors standards in the independent sector.

PAT warning

The Professional Association of Teachers is warning members not to take children on school trips without adequate safety precautions. PAT is also preparing guidance for teachers in charge of children out of school.

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Fun and games under scrutiny... activity centres have a new watchdog on tuition and safety standards

Children's safety to be monitored

Safety and tuition standards at children's activity centres are to be monitored by a new body.

The work will be carried out by the British Activity Holiday Association which includes among its members large operators like PGL, Dolphin and Butlins, as well as individual centres and schools.

Concern that children attending the centres needed greater protection, prompted 12 organizations to get together 14 months ago to formulate a code of practice. This has now been adopted by the association.

The code tackles three main areas:

- It lays down minimum safety standards, covering such things as equipment, staffing levels and procedures in case of an accident. To enforce them, an independent inspection system will be set up.
- Staff qualifications are to be examined. Staff should not only offer a satisfactory level of tuition, but also be able to take responsibility for the children in their care.
- Some form of bond will guarantee that money and the holiday itself is not lost if a centre closes down unexpectedly.

Membership details are available from the British Activity Holiday Association, PO Box 99, Tunbridge Wells, Kent, TN1 2EL. Tel: 0892 31504.

Pupils denied new radio hearing aids

by Susannah Kirkman

One third of all radio hearing aids for children are paid for by charities or by parents - although the aids are one of the best ways to help hearing-impaired children in mainstream schools.

The supply of these modern aids depends largely on goodwill, according to a national survey by the Royal National Institute for the Deaf.

Unlike traditional hearing aids, they bring the speaker's voice to the listener's ear, cutting out interfering noise.

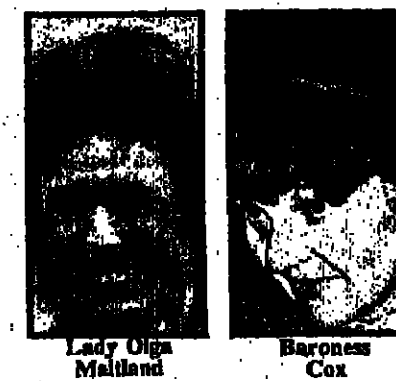
Yet many parents foot the bill for maintenance and repair, and spares are often not available when the aids are serviced.

Cutbacks by L.E.S. and health authorities mean that a child who moves may no longer be entitled to a radio hearing aid. And some children have no aids at home.

An extra 25 to 30 per cent of hearing-impaired children could benefit from radio hearing aids, according to the working group which carried out the survey. Only a quarter of children with hearing impairment have radio aids.

The working group says radio aids should be provided by the National Health Service, at an estimated cost of £1 million.

The Provision of Radio Aids for Children is available from the Royal National Institute for the Deaf, 105 Gower Street, London WC1E 6AH.



Lady Olga Maitland and Baroness Cox

NUT accused of snubbing Tories

by James Melkie

Leading Tory educationists have alleged that they were snubbed by the National Union of Teachers last week when they led a parent's delegation to the union's London headquarters.

Mr Fred Jarvis, NUT general secretary, was not present to meet the group which had travelled to King's Cross to urge the union to end its long-running strike action over the 1985 pay claim.

Baroness Cox and Lady Olga Maitland, who is prospective Conservative ILEA candidates for Holborn and St Pancras, headed the 60-strong delegation.

Mr Stuart Skye, the union's press officer met some of the delegation.

Afterwards, Lady Olga said: "We feel Fred Jarvis was a complete coward. He should have faced concerned parents." She said some children had suffered permanent damage from interruptions to their education.

Mr Skye said that Mr Jarvis had been unable to make either of two dates suggested.

"We learnt that the delegation was coming regardless so we agreed to receive a petition and we had two separate, amicable conversations with small groups of people."

Poly admissions service 'working well'

The new centralized system of polytechnic admissions has just completed its first full year of operation, and is said to be working well even though it brought forward deadlines for applying for courses.

Mr Tony Higgins, chief executive of the Polytechnic Central Admissions System, said: "The schools have coped marvellously. Most of them managed to get applications in by the closing date, and we can see no effect of the teachers' dispute on applications."

PCAS was established in 1984 to streamline applications for degree-level and DipHE courses at the country's 30 polytechnics. The system parallels in many ways the universities' admission system, UCCA.

So far, PCAS has had more than 122,000 applications for 34,000 places - more applications per place than in the university sector.

The overwhelming majority of

polytechnics has now agreed to accept applications only through PCAS. Lancashire Polytechnic, however, intends to accept direct applications, as well as ones made through the central system.

PCAS also announced this week that it had been granted £30,000 by the Department of Education and Science to manage the Advanced Further Education Information Service which publishes lists of higher education vacancies in polytechnics and colleges.

Woman wins discrimination hearing

by Carmel McQuaid

A Northern Irish chemistry teacher has received £1,500 compensation from her high school governors following an industrial tribunal ruling that she had been unlawfully discriminated against because she was a woman.

Mrs Christine Mackell, 31, failed to be appointed as teacher of chemistry to A level at St Patrick's High School, Downpatrick, Co Down, though she had more experience in science teaching than the man chosen. Her degree was in chemistry and she had consistently taught science subjects to both O and A level.

The successful candidate, who had studied chemistry only in the final year of an arts degree course, had taught geography, history, general science and human biology to both CSE and O level. During the interview he could not answer a question relating to A level chemistry.

The tribunal accepted that Mrs Mackell had one year less experience than the successful candidate, but held that her experience was more relevant for the post.

Agile minds rather than expertise sought

Industry is looking for agile minds and personalities rather than technical experts, engineers and scientists, a top industrialist told the ACPHE delegates. Firms want youngsters with the ability to keep on learning after school or college.

"The great requirement in my company is for agile minds, well trained, coupled with personality, young people who know how to learn," Sir Edwin Nixon CBE, chairman of IBM, told the conference. "We must win them over from the professions."

The challenge of Industry Year, he said, was to encourage in young people a new set of attributes and attitudes. "We have lost sight, of the pressing need for a solid foundation of knowledge - the basic core of knowledge - reading, writing, mathematics - is too often under-valued."

Listing the examination choices from GCSE to "a whole shelf" of vocational qualifications offered in 16-year-olds he said that plurality was in real danger of slipping into incomprehensibility, and therefore ineffectiveness. "In our anxiety to find solutions to a wide set of problems we have lost sight of the most pressing need of all - a sound foundation of knowledge."

Comparing Britain with the United States and Japan who achieve higher education for over 50 per cent of their young people, Sir Edwin said we have failed to inspire our youngsters with the same urge to learn.

Fourfold increase in micro courses

Computer studies courses in colleges have quadrupled in the past five years, according to a survey published this week.

The Association of Metropolitan Authorities, which carried out the study, claims that it demolishes the Government's case against the further education sector.

The study is part of the Inquiry into college performance that the AMA embarked on following the criticisms made in the *Training for Jobs* White Paper two years ago. The task was undertaken by local authority officers after the MSC had refused to cooperate in a joint inquiry. They surveyed provision for information technology in business studies, engineering and design courses, and construction and catering provision. The survey covered 103 colleges and reports that as well as the massive expansion in information technology, there was an increase of a third in construction courses. For these, more than 70 per cent of the colleges had formal consultative committees to obtain the advice of industry.

The AMA's report on the survey says that it is indispensable that such inquiry had to be undertaken to acquire elementary information about what was happening in major areas critically important to the economy and the well-being of society. It says:

- the control of post-compulsory education and training through one department of state;
- total management through the MSC;
- responsibility placed firmly with local authorities;
- responsibility placed with new regional authorities; and
- the establishment of a national policy body for NAFE.

He said that the options were not mutually exclusive and that only a package of reforms would meet the need.

Plans bind colleges

Colleges may have to turn away large numbers of students while running courses for which there is little demand as a result of the new planning process imposed on local authorities by the Manpower Services Commission.

Every college will be bound by its local authority's development plan, which lays down the work-related courses and the number of places to be provided. The plans for next year have already been drawn up by the authorities and submitted for MSC approval, and the commission is applying criteria based on its views of future demand for various skills and its priorities.

What is worrying some of the colleges, says Mr Jack Mansell, director of the Further Education Unit, is that many of the students and some employers may not take the same view as the commission's officials as to what they should be learning.

"We simply won't know until enrolment," he says.

The FEU is undertaking an in-depth study of the development plans submitted by 20 of the authorities. Mr Mansell says it is becoming clear that most authorities are, as a result of having to plan work-related education, extending their development planning to cover the whole of FE.

Resident industrialist scheme

Schools in the Woking area are to have their own industrialist in residence to change pupils' attitudes to industry and to establish closer links between schools and the world of work.

The scheme is being set up by Dr David Warwick, co-ordinator of the School Curriculum Industry Project in Surrey. Dr Warwick is basing the idea on a writer in residence project at Farnham Sixth Form College, where he was deputy principal.

He hopes an industrialist in residence will have a similar effect. "Although we owe our survival as a nation to industry, it is held in low esteem by many sections of the population. An industrialist in residence could do much to rectify the balance," Dr Warwick said.

The industrialist will act as a consultant to teachers over the industrial aspects of their work and to help them plan work experience and industrial visits.

He or she will also help the SCIP coordinator to plan in-service training for teachers. And the industrialist will be involved with several schemes to mark Industry Year, such as the twinning of Woking secondary schools with firms to carry out practical projects, and an "industrial" harvest festival to link schools, churches and industry.

The job will be part-time and will be based at Woking Sixth Form College.

Two years ago, the Government proclaimed that the local authority further education sector was falling industry and the nation. So it overrode long established conventions for the funding of the education system, and brought in the Manpower Services Commission as a powerful new paymaster to put things right.

Now the colleges are emerging from the toughest crisis in their

history with signs of a new confidence and assertiveness: the MSC's scrutiny has, by and large, failed to produce much evidence for the charge that further education is unresponsive and inefficient and out of date.

Ministers have at last discovered that the real villains are the employers, mostly mean and ignorant about training, and re-

luctant to accept any share in the responsibility for getting it right. The heat is no longer on further education, but the slur - and the controversial funding arrangements which it engendered - remains. The local authorities and the FE professionals are embarked on a campaign to secure public recognition of the reality. We report some of the opening shots.

Further education chief tells colleges to boost public image of service

Further education must ensure that the public understands what educators already know - that it is serving industry and the nation well, Mr David Bradshaw, secretary of the Association of Colleges of Further and Higher Education, told its annual conference last week.

"We know what is being achieved, but it's no good just telling each other. We have to sell ourselves to a wider audience," he said.

Delegates had pointed to the growing evidence that the colleges were more in touch with the needs for up-to-date skills than most employers, and that it was employers who were placing obstacles in the way of cooperation. The local collaborative projects funded by the Department of Education and Science to promote cooperation had confirmed, they said, that it was industry that was holding back.

"The facts coming back to the MSC show that industry just doesn't want to train," Mr Paddy Sheen, principal of Peterborough technical college, told

the conference held in London. He claimed it meant that the whole structure which the Government had imposed on further education was based on a false assumption and built on sand.

Mr Bradshaw proposed that the association should in future seek meetings with bodies like the CBI and the TUC - both of which have powerful representation on the MSC - to make sure that they understood the facts.

In his speech earlier, Mr Bradshaw had called for a thoroughgoing reform of the FE structure. The Government's intervention to fund work-related education had changed the balance of provision, bringing a risk that other kinds of further education would be neglected. Other aspects of the problem were the loss of local perceptions in policy-making, overlap between the DES and the Department of Employment, and the major involvement of the MSC and the establishment of NAB.

The way in which Government policies were being driven forward only

confirmed the divisiveness which had bedevilled education and work-related education for the past century with separate departments of state dealing respectively with "education" and "training" and helping to exacerbate the problems. The categorization within colleges of some courses as work-related might perpetuate the divide.

In a paper to the conference, Mr Bradshaw put forward a series of options for reforming the structure. They were:

- the control of post-compulsory education and training through one department of state;
- total management through the MSC;
- responsibility placed firmly with local authorities;
- responsibility placed with new regional authorities; and
- the establishment of a national policy body for NAFE.

He said that the options were not mutually exclusive and that only a package of reforms would meet the need.

Clear-headed management needed

by Jane Last



Geoffrey Mellings targets

and training down the line to where course planning took place.

"I am convinced that if middle or junior managers worked to clearly

expressed norms of good practice, the service and its paymasters would get maximum value at the point where the resources are expended," he said.

Employer cuts blamed

Mr Chris Patten, education minister of state, criticized employers for cutting back on investment in education and training in his speech to the conference on Thursday.

"The low priority given to education and training by many employers owes rather too much to an assessment of short-term costs and rather too little to a consideration of long term benefits," he said.

Mr Patten warned that at a time of unprecedented growth in new technology, companies would find that they had the sophisticated equipment but a shortage of skilled manpower to run and service it.

"That has already happened in certain industries in certain areas," he said. The fact that at the same time we had appalling high levels of unemployment was paradoxical "but not, I suggest, unrelated."

Edited by Mark Jackson

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Union casts doubt on success of reforms

The publication of the 1985 American schools statistics has been accompanied by something of an orgy of self-congratulation by the Federal Education Department.

With rising scores in college entrance examinations and fewer high school drop-outs, Education Secretary William Bennett cited the figures as proof that America's schools are on the rebound. "The excellence movement has clearly helped our poor and minority populations," he declared.

Not everyone agrees. Mary Hatwood Futrell, president of the biggest teachers' union, the National Education Association, said that the drop-out rate - 30 per cent - was still intolerably high. "We need an Education Department that directly addresses the drop-out question a great deal more than we need a Department that congratulates itself over rising Scholastic Aptitude Test scores."

Closer examination of the statistics does seem to cast some doubt on Mr Bennett's claim that minority and poor students are benefiting from the school reform movement. In Washington

DC, for example, it is true that SAT scores improved by 22 points between 1982 and 1985. But this masks the fact that all the improvement took place in private, not public, schools. In the public sector, the average score actually fell by three points over the same period, and at 44.8 per cent, Washington has the worst drop-out rate in the country.

The SAT is a voluntary examination, taken by only about 37 per cent of the national graduating class. In Washington DC no more than one in three public school students who do manage to complete their course opt to sit the test, compared with 95 per cent of those at private schools.

Nationally, there is also a long way to go before the test results get back to where they were in 1963. Though the decline bottomed out in 1980, after losing 90 points, President Reagan's stated target of recovering half that loss by 1990 is still far away. Thus far, the national average is 16 points up from its all-time low.

The latest flood of statistics not only ranked the states by examination

UNITED STATES

Bill Norris on the two sides to interpreting school statistics

achievement and drop-out percentage, but also by student-teacher ratio, teacher salaries, and the amount spent on each pupil. Mr Bennett appeared pleased that the last three items seemed to bear remarkably little relation to the first two, proving, he said, that the way in which money was spent was more important than the amount.

New Hampshire, in fact, which outsourced every other state in the 1985 SAT results with an average of 939 (out of 1,600) ranked 48th in terms of the salaries paid to its teachers, with an average pay of \$18,577 (£13,269). Only Maine, Tennessee and Mississippi paid their teachers less. In terms of expenditure per pupil, New Hampshire was 27th with an outlay of \$2,980.

By contrast, Alaska, which spends \$8,627 per pupil - \$3,500 more than second-placed New York - and pays its teachers the highest average salary of \$39,771 failed to distinguish itself. It came 20th in the SAT table, tying with Alabama, which pays only half as much.

Utah scored a notable double achievement, spending less on its students (\$2,053) and having a higher pupil-teacher ratio (24.1:1) than any one else. Nevertheless, it still ranked equal 11th in the exam achievement table, with Illinois, Michigan and Maine.

The worst drop-out rates, after Washington DC, were in Louisiana and Alabama - the best in Minnesota (which managed to graduate almost 90 per cent of its students), Nebraska and North Dakota.

The comparative tables, which were instituted by Mr Bennett's predecessor, Terrell Bell, three years ago, have not been popular among educators. But Mr Bennett clearly intends to continue the exercise. "When you have this kind of chart some people are

going to come off looking better than others. But it is essential not to keep these findings as secrets, to tell the American people how we are doing."

Howard Carroll of the NEA, however, remains unconvinced: "Everybody wants to know the score, but this is an incomplete scorecard. Tests are not a true evaluator of achievement."

John Weiss, executive director of Fairtest, a Boston-based group that is critical of standardized tests, said the chart "violates professional guidelines for proper test use and warps school criteria."

And even those who set the tests are not happy with this use of their results. "We object to the misinterpretations that result from cross-state comparisons," said David S. Crockett of American College Testing, which has refused to give its figures to the Education Department.

But Mr Bennett has been getting them anyway, and while the statistics lend themselves to such happy interpretation it seems likely that they will continue to be an annual event.

End of line for bussing

The controversial system of "bussing", under which American children are often transported long distances to ensure racial balance in schools, may be on its way out. A Federal Appeals Court has ruled that Norfolk, Virginia, can now substitute a system of neighbourhood elementary schools.

Although not nationally binding, the long-awaited ruling is expected to have wide repercussions. Hundreds of school districts across America have been wanting to escape from the burden of bussing, originally imposed on them by the courts as a desegregation measure. Like Norfolk, many have found white parents moving out of town, leaving the city schools almost as segregated as before.

The Reagan administration entered the Norfolk case on the side of the school board, with Assistant Attorney General William Bradford Reynolds encouraging school systems wanting to follow the Virginia town's example.

"There is general recognition among all groups that the cross-town bussing plan has worked less than perfectly," he said. "There are a host of pressure points among minorities and whites to

take this yoke off and move to something that will begin to treat some real serious issues within the public education system."

Norfolk's new neighbourhood school plan could leave six schools with a 70 per cent white population, and 10 with 95 per cent black enrolment, making them technically segregated. Under the existing bussing scheme, only one of the town's schools has such a racial imbalance.

The court ruling said it found this "disquieting", but ruled in the school board's favour nonetheless. White enrolment in Norfolk schools sank from 70 per cent in 1970 to 42 per cent in 1983, and the judges declared they were not bound to compensate for demographic changes. The neighbourhood plan, they considered, might help to stop the white exodus.

The court's decision, however, will not go unchallenged. The National Association for the Advancement of Coloured People Legal Defence Fund, which claims it could unravel 30 years of efforts to integrate and equalize American schools, is threatening to take the case to the US Supreme

Court. "I think it's the first case where a court has sanctioned a school district's return to an assignment policy that would result in the re-segregation of the schools," said Julius Chambers, the fund's director.

One of the factors worrying Mr Chambers is a ruling by the court that when a school district has been declared "unitary" - free of segregation - it will be up to plaintiffs to prove any changes made are discriminatory. Previously the onus was on school boards to justify the proposed changes.

"I know there has been discussion by a lot of districts to not modifying plans and eliminating bussing," he said. "The cost and divisiveness of litigation will drive some of them, but I think a number will try. And I think the Justice Department is encouraging a number to do that."

Mr Chambers appears to be right. Mr Reynolds, when asked whether it would be wiser for school systems with court-ordered bussing to wait for a Supreme Court decision on the Norfolk case before making changes, said they could modify their plans now "and do so quite comfortably".

Soft options

JAPAN

Young Japanese are nothing like the stereotypical image of their hard-working elders: they shun challenge, avoid commitment, are easily bored, value "fun" above all else and have little - if any - social conscience.

According to a study of 18 to 23-year-olds, conducted by the Hakuhodo Institute of Life and Living, young people derive most enjoyment from leisure activities and would like to cut down on work and study in order to devote more time to them.

Words such as "endurance", "ardour" and "fighting spirit" belong to a dead language for this age group, asserts the report.

Today's young adults, the first generation pampered from the cradle in Japan's post-war affluence, do not want to grow up. They work hard at following the right fads and fashions to maintain their lifestyles and studiously avoid the risk of failure.

Ms Mariko Fujiwara, the institute's director of English publications and overseas research, says: "Older people don't understand why the young, who have everything they want, are not prepared to play for high stakes in life. Even if they play, they would still land on soft ground."

They have a weak sense of the continuity of society, she adds. They have no historical perspective, through lack of interest rather than education - and dismiss the deprivations and sacrifices of their parents as irrelevant.

They are shrewd, worldly, thrive on short cuts and aim for enjoyment through diversity. When one activity, whether sports or any other pursuit,

ceases to be "fun" or becomes too taxing, they move on to another.

By avoiding commitment, they avoid the responsibility of trying to succeed and the humiliation of failure. "But deep down, they know they haven't faced the test of life," admits Ms Fujiwara.

Friendships are paramount and to be maintained at all costs. With the decline in the birthrate and the emergence of the nuclear family, children have been forced to seek their security and companionship outside the immediate circle.

To young adults, "getting along" is what counts. They make as few intellectual or emotional demands as possible on their friends and regard knowledge of latest trends as fodder for conversation and a route to popularity.

This is not the first time a study has labelled Japanese young people as apathetic, materialistic, aimless, self-centred, socially unaware and over-protected and indulged by parents anxious to give them everything they want.

The decline of traditional values is often blamed for the rise in school violence and has prompted calls for more thorough so-called moral or civics education, advocated by the Prime Minister, Mr Yasuhiro Nakasone, and his education reform council.

Although older generations accuse the young of moral decay, there is a positive side to their attitudes. Ms Fujiwara says: "Young adults aim to be well-founded people and are probably the first generation of Japanese who know how to enjoy themselves."

Barbara Cassano

Core curriculum plan is part two of the great debate

INDIA

Paul Flather on the latest phase of the education policy review

An ambitious plan to give all India's 110 million pupils in 600,000 schools a unified core curriculum based on education for "the head, hand, and heart" has just been unveiled by the country's education research and training council.

The plan, *Framework for a National Curriculum for Primary and Secondary Education*, is the second major document to appear as part of the "great debate" on national education policy taking place all over India.

Last August a scene-setting document, *The Challenge of Education*, was published by the Education Ministry. It prompted meetings and seminars throughout the country, and a flood of comment and criticism in the media.

The latest framework, a 36-page document, sets out the ingredients for a national core curriculum - general sciences, languages, mathematics, awareness of the social and economic environment and energy issues, the freedom struggle, basic social values, plus scope for socially useful productive work, art, health, and physical education.

It starts with the teachings of Mahatma Gandhi who saw education as

central to the "development of national consciousness". It attempts to follow Gandhi's call for "all round development of the child" based on "character building as much as on the acquisition of knowledge".

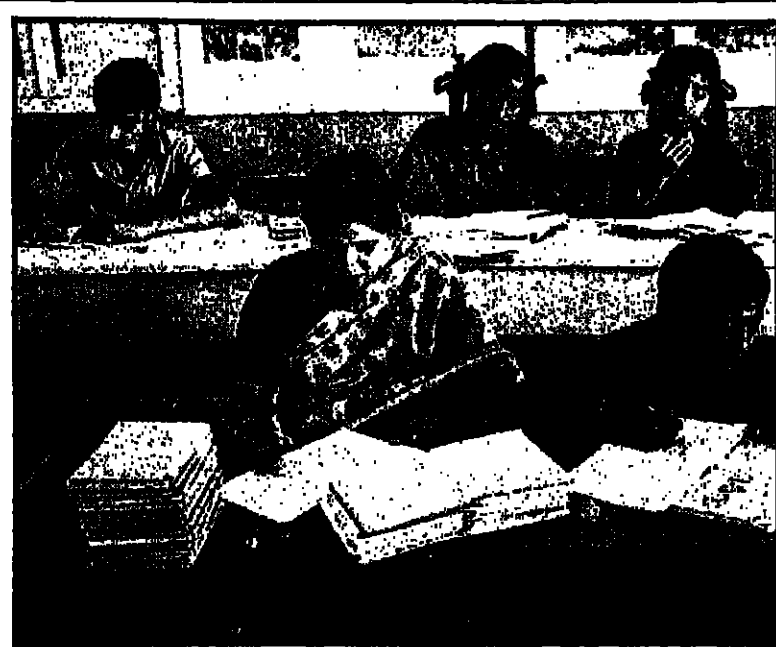
Dr P L Malhotra, director of the National Council for Education Research and Training (NCERT) told *The TES* that one of its main aims was to reduce regional and economic inequities across the country, and to build up national consciousness.

It envisaged the new curriculum will include the Indian freedom struggle against the British, and pupils will be taught about sacrifices made "for freedom and for protecting the integrity of the nation" in the hope it inspires patriotism.

Emphasis will also be put on India's "composite culture", on a citizen's sense of rights and duties, on problems of population growth, and on a sense of pride in being Indian.

The scheme will need time, energy, resources and widespread support if it is to be implemented. It faces two hurdles - a fear that it will be used by central government to impose its outlook on the 22 states, and scepticism from educationists who point out such ideas are a luxury when so many schools lack even blackboards and chalk.

The document appeared to overcome its first hurdle when it was approved at a meeting of state education ministers in New Delhi in January. But cynics say that once the precise



Curriculum emphasis on developing 'all round' character of the child

syllabuses - still being drawn up by the NCERT - are issued for comment, state governments like West Bengal and Tamil Nadu will adjust the curriculum to suit their own views.

The second hurdle is readily acknowledged by Dr Malhotra. He admits the whole plan for a "new education policy" depends on more central resources. But that, he says, is clearly a matter for the politicians to show they really do want reforms.

Meanwhile 40 per cent of the country's primary schools are in mud-built buildings without blackboards. One in three have a single teacher to teach three or four classes. Only one in 20 pupils completes basic schooling to the age of 14.

There are other hurdles. The NCERT, which enjoys a monopoly in textbook production, is trying to produce the new syllabuses by the summer - when the Government aims to implement the policy.

Few believe such a tight schedule can be met. The books and materials have to be produced and translated into regional languages before they can be introduced into schools. The NCERT is also committed to a complete review of current textbooks and

source materials - expected to take at least three years.

To prepare teachers the NCERT has come up with a plan to use new educational technology, television and videos, and a national scheme of inservice refresher courses.

Dr Malhotra believes he can start by training 500 teacher-trainers "to make education child-centred, to gear it to problem solving, and to relate it to the local environment". They will then be sent to 2,000 select institutions around the country to teach other trainers, who will, in turn, train batches of 100 local teachers in intensive two-week courses.

The Government has earmarked £6 million for this training. Dr Malhotra insists he can create a nation of "new teachers" in two years. Others are less optimistic.

There are three other problems. One is the competitive exams system which many feel is the main reason for such high drop-out rates. While continuous assessment is favoured by many educationists, state governments say it would be quite impossible to implement at present.

A second issue is language. The document proposes all schooling in

mother-tongue until 10 or 11, when an agreed three-language policy should be followed: mother-tongue, English, and Hindi (or another modern Indian language for Hindi-speakers).

This will mean recruiting local teachers for all primary schools. It might also cause problems at secondary level with student mobility restricted if students do not master English or Hindi. Finally, there are fears among teacher groups that the curriculum will continue to be overloaded and impossible to complete.

The next stage of the debate is publication of a draft *New Education Policy* document, expected later this month. It will be passed to states for comment before discussion in Parliament, ready for implementation in July. The Government and the NCERT may be hard pressed to stick to the timetable.

Since the early 1950s, India has only once embarked on such a thorough review of education. But the 1958 National Education Policy, agreed after three years of study and debate, was never properly implemented. It was 1975 before its main recommendation for a unified school structure of 10 years (primary) plus two (secondary) plus three (higher and further) was detailed, and it is only now that the system is underway in all states.

Dr Malhotra says that the NCERT will not fall into the same traps. "I will use the new education technology extensively and I am sure now we will be able to bridge the gap between those who get the best education and those who get nothing," he says.

Critical to the scheme's success is Prime Minister Rajiv Gandhi's personal interest in education. He sees it as the main influence in taking India to his cherished "21st century dream of growth and prosperity".

It will be down to Gandhi to find the funds, to force action from the Indian bureaucracy, and to persuade all to support the proposals if the plans are to get off the ground.

Officials at the newly created Ministry of Human Resources, which now controls education, are working late into the night trying to resolve outstanding problems before issuing the *New Education Policy* document. Prime Minister Gandhi is reported to have had several personal meetings recently with the human resources minister, Mr P V Narsimha Rao.

Teachers go on strike as Cabinet rejects pay deal

New Zealand's secondary teachers have gone on strike for almost the first time ever, their action triggered by diminishing career prospects and bitterness at a last-minute blow to their pay settlement.

On February 14, after months of negotiation and compromise, about new salary scales, the special salary negotiating body was satisfied, the Minister of Education and the Associate Minister of Finance were satisfied, and the single secondary teachers union was satisfied. But the following Monday, the Cabinet turned the whole thing down.

By noon all the state secondary schools in the capital were closed, leaving the city with only three private schools open. The next day more than half the schools in the country were closed by disruptive meetings.

Now sporadic regional walk-outs are to be followed by a national one-day strike. A year from a one-day stoppage in 1976, this is almost the first real strike by secondary teachers that New Zealand has ever seen. Other stoppages have been limited to the regulations by closing schools for only a third of a normal day.

Also extraordinary was the speed of the reaction. Teachers felt they were being let down and the first actions, after disruptive meetings and a march on Parliament, were a reaction to the

NEW ZEALAND

Lynn Richards on the angry reaction that has closed schools

Anger has been directed not at the Education Minister, Mr Russell Marshall - who obviously had been overruled by the Cabinet after reaching agreement with the teachers - but at the Minister of Finance, worried by a big deficit, the Prime Minister, who told one demonstrating teacher to "piss off", and the Minister of State Services, who has been accused of leading the public astray about what the teachers are claiming.

The claim is for slightly more than the current increase being given to other Civil Servants, but only at the points where promotion is nowadays blocked as rolls fall and positions are fewer. The increases are needed, the teachers claim, to attract graduates into teaching by giving a better career structure, and to retain those already in.

Schools started the year at the beginning of February on average 1.2 teachers short, usually in the vital areas of science, and accountancy, but some also in physical education, music and art, all of which are "core

subjects in the first years of New Zealand high school education and must be provided.

Anger at the Cabinet's knock-down blow is increased by recent huge increases - up to 40 per cent - given to top civil servants, MPs, and university staff by a statutory body, the High Salaries Commission, originally set up to iron out anomalies and keep increases steady. After the wage freeze of the Muldoon Government, the commission granted "catch-up" increases and the Labour Government could not, without changing the law, avoid paying them.

As major tax reforms are scheduled for September, perhaps the balance will alter, but for the meantime the police force has also been given huge pay increases. One teacher, speaking at the rally outside Parliament, thrust her arm around the shoulder of a watching policeman and said: "Four years at university, one at teachers' college, eight in the classroom, and now I get the same pay as the young women two years out of school."

Some parents have a different slant on the dispute, however, one saying to a *TES* reporter: "My daughter has just had seven weeks' holiday, one week at school with next to nothing happening, and now the school is closed. She's sitting exams this year. These teachers should be teaching. They've got better conditions than the rest of us already."

School falls foul of aristocrat

WEST GERMANY

The Duke of Edinburgh's old school has been told it must move because the pupils' behaviour has outraged the aristocrat in whose abbey it is housed.

Salem, West Germany's top boarding school, was founded in 1920 by Prince Max von Baden and by Kurt Hahn of Gordonstoun fame. It is a mixed school of 500 pupils and, despite fees of £600 a month, has long waiting lists.

The school has a strong tradition of achievement and community service. Each day starts with a compulsory run and pupils are kept busy with a full programme of activities, including mauling the local fire service.

But the present owner of the property, the Margrave of Baden, who is a colonel in Germany's equivalent of the Territorial Army, has had a number of disagreements with the other school governors. These included a major row over the visit of one of Germany's leading "green" politicians as a guest speaker to the school's sixth-form in nearby Spangart.

The last straw for the irate Margrave was a flying ace of burnt toast that landed at his feet as he was showing a church dignitary around his impressive 14th-century Cistercian abbey.

The Margrave has now decided that it is time for a new head and board of governors. Failing that, the school will have to find new premises by the end of the year. A court of arbitration will be convened to decide whether there are any justifiable grounds for this premature termination of a lease which should run until 1999.

John Darcy

From Russia with a little love . . .

SOVIET UNION

Janet Price looks at the difficulties of sex education

These are classified as "a bore" by Mishra, a 16-year-old with more interest in pop music and skateboards than apples and disbiosis.

Some parents, like a Moscow mother of two who calls the lessons "a menace", believe that the course will do more harm than good.

Even leading Soviet writer, Vasiliy Belov, attacked the course in an interview with the newspaper *Sovetskaya Kultura*. He insisted that "a sense of shame is as important today as it was yesterday", and claimed that schoolchildren would be better off if they stuck to literature and language lessons.

Letters from disgruntled readers complaining that the course "fosters an unhealthy interest in the subject" have also recently appeared in the Press.

But Marina, a young maths teacher in the capital, stresses that, on the contrary, the pupils could do with a few more home truths and a little less modesty. She agrees with Igor Kras, a leading Soviet sociologist who wrote to

the national teaching newspaper *Uchitel'skaya Gazeta* complaining that teachers themselves suffer from a mortifying lack of information.

Like other ninth and tenth-form teachers, Marina went on a two-month course before being qualified to take a class of "Family Ethics" as a subsidiary subject. "I have no textbooks to teach from, so it's difficult to communicate properly with a class of 32 mixed teenagers staring up at you," she admits. "I'd prefer small discussion groups - then they wouldn't be embarrassed about asking me questions."

Nikolai Veremeev is the director of a publishing house which has just come out with an official handbook on marriage-relations called *Be Happy*. He receives many letters from teachers in desperate need of more of these books. *Be Happy* came out in an edition of 35,000 copies, and was sold out in a day.

Yelena, a 16-year-old student at a special sports school where the "Family Ethics" lessons are voluntary, says that about half her class attends. "We discuss articles from the Press about broken marriages and why they happen. I think in general it's useful for example, you see how to cope with living in your parents-in-law's flat."

Although surveys carried out by

Soviet sociologists show that 40 per cent of divorced couples cited "disharmony in sexual relations" as the cause for the break-up, Yelena's teacher has never broached the subject. Perhaps this omission was due to a public warning by Tamara Afanasyeva in *Uchitel'skaya Gazeta* that teachers "should avoid vulgarity like the plague". While encouraging class debates, Mrs Afanasyeva also cautions "that such discussions can descend to the level of street-talk."

But school authorities have more than smutty stories to fear from their pupils. An official at the all-union Institute of Crime Prevention was quick to point out in a Young Communist League newspaper that the deplorable consequences of early sexual relations among youngsters is a direct result of "those pornographic magazines and videos which are percolating through to us from the West".

Whatever the source, Soviet youngsters are not as naive as their elders think - as a joke now going the rounds in Moscow shows. An old *Babushka* chatting to two little boys asks if their mummy found them in a cabbage - the Slavic equivalent of the story: "We'd better not tell her what really happened," one lad wearily says to the other. "She'd die of shock."

TEACHERS

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(018)

Russian books: where supply meets demand

Sir - I was interested to read Nicholas J Brown's piece, "Samizdat school books" (TES, February 14) in which educational publishers were accused of "scandalous failure" in the field of materials for Russian.

All publishers would think very carefully before investing in a fully-fledged four or five-part Russian course of the magnitude of *Action* or our own *French for Today* when the total entry for O level is now well under 1,500 per year. This figure has been dropping steadily: in 1970, 3,370 entries for Russian O level were registered and by 1984 that had slipped to 1,279.

It is further unfair to suggest that publishers make no effort to support the teaching of Russian in schools. We have three titles in the *Modern Russian*

Prase Composition series suitable for A level, each of which sells under 500 copies per year but which we keep in print precisely because of a commitment to the few still relying on those books.

Many of us involved in publishing or teaching would agree that the failure to promote the study of Russian is scandalous. But I must object to Nicholas Brown's accusation that this "scandalous failure" is "by British educational publishers".

ELISABETH BOLSHAW
Senior Humanities Editor
Hodder and Stoughton
Educational Books
Sevenoaks
Kent

Still involved

Sir - I was encouraged to see *The TES* giving such welcome column inches to open learning in Huw Richards' article about the Open Tech (February 14). For those of us actively involved in open learning it is important that the educational world is kept informed of developments.

I must, however, correct one major error in Mr Richards' otherwise informative piece. George Tolley was, and still is, actively involved in the work of the Manpower Services Commission, but no longer as head of the Open Tech Unit. He was succeeded in 1984 by David Tinsley who has ably continued and extended the work started by George Tolley.

KEVIN BEALE

Secretary
Thames Valley Open Learning Group
PO Box 38
Banbury, Oxon



George Tolley

Old conflict

Sir - On January 3 you reviewed Martin Harrison's critique of our work. He was presented as an academic driven to write in sorrow rather than in anger about the harmful effects we have had upon media studies. In fact, his critique had more direct origins in the conflict between us and ITN.

It emerged from the close contacts which Harrison had with the senior management of ITN, notably with Paul McKee, who has for some years handled its response to us. It was on ITN's suggestion that Harrison undertook the critique and parts of it are a repeat of inaccurate criticisms, originally presented by McKee. Much of the rest of the book is a reprinting of 250 pages of original ITN transcripts. ITN partly underwrote this research by agreeing to buy several dozen copies of Harrison's book in advance of publication. These were later distributed by ITN's public relations department. As a critique it partly because ITN upon it, partly because it misquotes and misrepresents our work and also endorses the crudest media stereotypes - stating, for example, that our work is "no more typical of media

Missed chance

Sir - No doubt others have commented on the inaccurate Russian shown on the blackboard which headed your article "Samizdat school books". It is a fortuitous mistake, which illustrates the haphazard approach to the teaching of this important language. I would not blame educational publishers for a natural reluctance to produce materials which may not find buyers. The roots of the problems lie deeper, and are of longer duration. In

the 1960s, as a result of a government report, some language teachers undertook training in the teaching of Russian, but I believe it is probably fair to say that not enough advantage was taken at schools in response to this initiative.

Why not? Headteachers are often pragmatic and conservative, and hesitate to introduce a language which involves heavy initial outlay and is difficult to staff. The subject teachers may leave, and be much harder to replace. Other considerations than the

intrinsic value of the language may influence their decisions.

I applaud the brave efforts of individual teachers to keep the language "alive" in Britain's schools, but I am sorry to say that, unless some strong wind blows away the prejudice surrounding the teaching of Russian, its future is bleak.

J D GARNETT
7A York Road
Ashington
Rochford
Essex

Overall decline

Sir - Generally Mr Brown's article is a fair analysis of the situation regarding the teaching of Russian in this country.

However, 387 schools with 8,800 entries result in minimal entrance to level examinations and even smaller to A level. The dwindling of British published material is in direct proportion to the decline in Russian studies since the 1950s.

As importers of Soviet material, we believe that just as specialist British publishers serve the ELT teaching world wide, so do the Soviet specialists for RFL.

Mr Brown mentions the co-operation with US authors. I can quote others, especially an on-going arrangement with Bricken Verlag in West



Germany. If there is a lack of control over what Moscow decides to produce, this is a criticism aimed at the wrong quarters.

The expert editors of RFL teaching staff of Soviet universities have been puzzled for many years why British teachers and lecturers do not co-operate with them. Indeed, David Rix's *Dialogue* is an isolated example, but an example of the only way

ahead to remedy the situation.

For our part, we are prepared to "host" a panel of experts who could survey the whole range of material currently available and who could actively contribute to the development of locally suitable material. We would encourage the producers to speed up production and to keep the titles in print, as is already the case with many publications.

However, above all, everyone engaged in the field of Russian teaching must tackle the problem at its roots - the teaching of Russian needs official encouragement.

DR EVA SKELLEY
Managing Director
Collets (Booksellers)
Wellingborough
Northants

Job insecurity

Sir - How pleased I was to read David McNamara's article (TES February 14). At last someone is highlighting the fact that many hundreds of teachers predominantly women, are "permanently" working on short-term contracts, not necessarily renewable.

As Mr McNamara pointed out, how well this suits employers coping with falling school rolls. But how well does it serve the children or the teachers? I was one of the women trained in the "different educational climate" of the late 1960s and gave up my permanent Scale 2 teaching post to raise my family in 1978. Not having the foresight to envisage the changes in the profession, I saw this as a necessary

disruption of my career.

Since then, I have financed myself (to the tune of £700+) to study for a part-time BEd and consequently graduated with first class honours specializing in a shortage area of primary science and maths. I am at present (and many regard this as an act of lunacy) again financing my study for an MEd.

For the past four years, I have worked for the same authority which initially employed me, first as a casual

Case distorted

Sir - Readers of Martin Harrison's *TV News: Whose Bias?* will judge the book on its own merits but no thanks to your reviewer, Nigel Andrew (TES, January 3).

Andrew reports that Harrison "detects the (Glasgow University Media) group repeatedly overlooking or suppressing evidence which does not fit their thesis, misquoting their facts and figures, distorting the record, using woefully lacking in scientific rigour". This grossly misrepresents Harrison's case, which does not depend on the detection of a Glasgow conspiracy.

Harrison's argument is that the group's evidence is insufficient to bear the weight of our conclusions, not that we have deliberately set out to suppress, message or distort it.

In his opinion, "ITN coverage seemed in general to be competent, fair and more diverse in its 'frames of explanation' than could ever be guessed from the *Bad News* account." There are grounds here for serious debate, though: nothing very new. Your reviewer, on the other hand, who gleefully but mistakenly assumes that Harrison has finally shot the legs from under the Glasgow group, is contributing nothing whatsoever to the dialogue between broadcasting and media studies which he claims to support.

DR HOWARD H DAVIS
Lecturer and member of
Glasgow University Media Group
Elliott College
The University of Kent

Family rights

Sir - Am I to assume, from Sir Keith Joseph's new Education Bill which gives parents increased power, control and rights to appraise their children's education, that our students - who spend an initial four years intensively studying, and a would-be lifetime in the practice of education - can acquire extensive educational expertise from simply becoming parents?

Then, perhaps I might more profitably turn my professional attention to the business of how to beget children and to economically effective methods of converting progeny into marketable products for parental consumption.

CHRISTINE WILKIE
Senior lecturer in language,
literacy and educational studies
Bulmer College of
Higher Education
Earley
Reading

Euro interface

Sir - There seems to be the opinion abroad that the provision made by central government to introduce teaching about the new technologies into schools is adequate if not quite to be commended.

In reality, the funds made available to support, for example the purchase of computer hardware in our secondary schools are derisory in comparison with those provided by government for colleges across the Channel, our economic competitors.

We in secondary schools stand accused, for we "have not prepared our young people for the working world". How can we? It takes equipment and software and our teachers need to be trained. Our unsupported efforts are indeed beginning to fail.

I was recently a member of an EEC study group which spent a week in Munich seeing how the West Germans are tackling the problem of teaching "informatics". In the group there were also heads from France, Holland, Denmark, Italy and Greece and of course we exchanged information.

It would seem that we are ahead of the Greeks, level with the Italians and rapidly falling behind the others. There are fully financed government programmes underway in France, West Germany, Holland and Denmark which are providing schools with some 10 times the equipment that has been made available here. Their teacher training programmes and software development schemes are also far superior to what is on offer at home.

It is true that some of our schools have purchased a fair amount of hardware by raising funds themselves, often with parental support, but many others could not. Much of our teacher training is in fact self-taught or "learned" from colleagues, while our software production is at best self-help and haphazard.

We were away to a good start in this field because of the goodwill and initiative of our teachers, but we who manage schools know goodwill is now exhausted and that initiative cannot flourish when morale is low. Perhaps it is significant that teachers' salaries are generally half as much again in those countries that are surging past us.

R HASLAM
Headmaster
High School
Settle
N Yorks

Holes in open plan criticism

Sir - Linda Hall's article "Open and Shut Case" (TES, February 14) has a charm in its forthright expression of received wisdom about open plan primary schools. Certainly it also commonly held assumptions about primary education method, and is supported by a "pot-pourri" of research and personal experience.

There are, however, one or two basic flaws to the article. The attempt to generalize on such a particular set of evidence does no justice to Dr Hall's own academic background and experience. Such generalizations are no help to rational debate at a time when the need for reasoned and reasonable argument is paramount. Good and bad

can be found in all schools throughout the spectrum of types.

The use of literature and research was specious. A more balanced article might have made reference to the work of Maurice Galton, Joan Dear, Len Marsh and Bill Forward. Such selectivity must call into question the ideological of the author. Unfortunately, the entitlements given to her by your editor give greater credibility to the article than it deserved. As a senior lecturer in "English", Dr Hall still has much to learn about "professional studies". It seems that the paper was generated more by a desire to promote classical teaching styles, than a concern with the actualities of pupils' learning.

Team work

Sir - I cannot agree with Linda Hall that open plan schools are of little benefit to children.

The school in which I work, (a hotchpotch of buildings spanning 140 years) has both open plan and traditional teaching areas. Colleagues who have worked in both usually express preference for open plan. They enjoy the challenge of working alongside other teachers. They are stimulated by the increased variety and vitality of the larger teaching units. On returning to a traditional classroom they experience isolation.

Children can gain considerably from being part of an organization where teachers, acting as a team, are willing to pool skills and talents and share ever dwindling resources. Open plan provides a viable setting for this. It lends itself to co-operation, willingness to learn from others, innovation and forward thinking. These are all qualities very much in demand by present-day society. It is no accident that today's offices and commercial buildings are modelled on this concept.

Of course there are inadequate open plan schools; as there are some poor traditional ones. A combination of ignorance of how children learn and, I suspect, a professional experience more in keeping with designing warehouses and supermarkets than educational establishments, has caused some architects to produce some rather appalling designs. The wonder is that these were ever accepted in the first place. Equally, there are those open plan schools that are well designed, but because of eccentric or ineffective management, or, more likely, lack of funding, are prevented from operating successfully.

P R WILLIAMS
Headteacher
Peakirk Cum Grinton
CE Primary School
Grinton
Peterborough

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P R WILLIAMS
Headteacher
Peakirk Cum Grinton
CE Primary School
Grinton
Peterborough

Design for living

Sir - Linda Hall paints a disturbing picture of what actually happens in open plan schools. Her article made me thankful to be working in an open plan school which is light years away from those described.

I count my blessings that staff and children here are too involved and delighted with day-to-day living and learning, to be affected by Mr Hall's depressing findings. The living and learning goes on in an atmosphere of mutual trust, respect and excellence. The design of a building is but one factor, the others are the relationships within a school and the determined endeavour of teachers to provide an encouraging and enriching curriculum for the children in our professional care. I suggest that Mr Hall might look beyond the design of building for the failures that she describes.

The photograph which accompanied the article certainly gave me cause for alarm. My heart goes out to all chil-

learning - including class instruction, discussion, group work, and individual programmes of work.

I take exception, on behalf of many colleagues working in open plan primary schools in the vicinity of Bulmershe College, to Dr Hall's dismissiveness of their considerable and excellent achievements in enhancing the quality of children's learning.

RODNEY E KING
General Adviser (Primary Education)
Shire Hall
Shirefield Park
Reading
Berkshire

dren working in unsympathetic environments deliberately constructed by the teachers who work with them.

I would not dispute that Linda Hall has found supporting evidence for Bennett and Neill's reports. What I would dispute is her suggestion that all open plan schools are disaster areas. I cannot believe this to be a true picture, and she does a disservice to all those teachers who are succeeding in and enjoying working in open plan schools.

R A JEFFRIES
Headteacher
Fair Meadows primary school
Overseas Road
Newhall
Burton upon Trent
Derbyshire

Letters should be as brief as possible and typed on one side of the page only. The Editor reserves the right to amend or cut letters where necessary.

keyboard effectively and have no knowledge of office procedures.

Other examination boards, such as the RSA, offer exacting, demanding syllabuses and examinations in these subjects. I am very disappointed that the NEA has been unable to do the same.

I see no reason why pupils in the north of England should be disadvantaged in this manner and I would be very pleased to hear of other examining boards which treat these subjects more seriously.

C MONAGHAN
19 Rowley Bank
Castleside
Consett Co Durham

Shelf life

Sir - Having read the article "Silent service" in the TES (January 31) in which the high reputation of Nottinghamshire Education Authority in respect of provision of school library services is justly commended, it is sad, if not appalling, to have to report the following.

Rushcliffe Comprehensive School, West Bridgford, is one of two county schools which is to lose its professional library assistance at the end of this term. Other schools may be similarly threatened. This is as a result of a decision on cuts made at a recent meeting of the education committee. As a result of this loss of staff, Rushcliffe School library will be closed from Easter until further notice, since its secure and effective use would not be guaranteed.

To the editor of a journal such as yours, there is little need to spell out the consequences of the lack of a library and the many services it provides for all members of the school community.

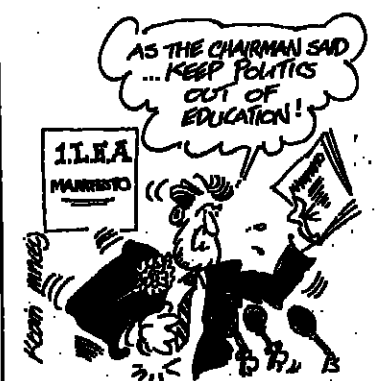
Staff, pupils, parents and governors are uniting in a fight to restore professional library staff.

A BARKER
Staff governor
Rushcliffe School
West Bridgford
Nottingham

Low key

Sir - The Northern Examining Association is proposing to keep keyboard communication (typing) and office studies as second-class subjects in schools. The recently published proposed GCSE syllabuses limit the maximum possible grade to C. So much for the exam for all!

In the rapidly changing world of modern office equipment and computer communication, these subjects are becoming increasingly relevant and important. Future employers will be given a choice between lower-C ability pupils taught in these subjects or higher-ability pupils who cannot use a



Full report

Sir - It was something of a surprise to see in the February 21 edition of *The TES* an article entitled "Eastern Promise" being ascribed to Mr Yaseen and myself (even though you spell my name wrongly). As far as Mr Yaseen and I were aware, the features editor was still awaiting our approval of the edited draft of our original article.

We are extremely angry that the features editor jumped the gun, and printed an edited version of our article of which we do not approve. We wish your readers to know why we disapprove of the version that appeared in print, and also provide an insight into how seemingly innocent editorializing can give a very different impression as well as change the thrust of an article.

The title of our original article was purely descriptive, "The Case For Islamic Studies", which became transformed into "Eastern Promise", a phrase your features editor should know from reading the literature on racism, has racist and sexist connotations. As for the phrase "intellectual racism", which appears in bold type in the introduction, it is not one to be found anywhere in the literature about racism. Then again, there is nothing particularly intellectual about racism. The examples we cited in our article were largely of cultural and institutional racism.

Before *The TES* altered it, our article was a thoroughly documented, closely argued, academic article. The editing rendered it a piece of unverified opinion. None of the 20 references was included, probably due to space, but superscript numbers in the text could still have been used to indicate references existed without necessarily publishing them. Personally we are of

the opinion that teachers would have welcomed the references as resources for further investigation.

The way topics were allocated to O and A levels was not what we wrote in our original text. We indicated clearly that certain topics were to be studied, first at O and then in greater depth at A level.

The last paragraph of our article was originally a quote from Professor Wair, a leading Arabist who did lend weight to our arguments, but that was cut out. Even the designations of the authors, which are usually included, were missing, giving the readers the impression that two ordinary individuals off the street were giving their opinions. The reality is that I am press officer for the Minority Ethnic Teachers Association and also co-director of Equal Chance company which trains people in sex and race discrimination legislation. Mr Yaseen is the secretary of the Muslim Education Council of Scotland. Does that not place our article in a different light?

All in all, *The TES* not only misquoted Mr Yaseen and myself but what they printed without awaiting approval of the final text that was being negotiated, but also marginalized and trivialized the arguments we presented in our original article by the way it was edited and jizzed up. I am sure your readers suffered most by being deprived of the opportunity of reading the well documented, closely argued original.

SHAHID ASHRIF and
MOEEN YASEEN
131 Rockmount Avenue
Glasgow G46 7DR

We apologise for spelling Mr Ashrif's name wrongly and for failing to include the names of the authors' organizations - Editor.

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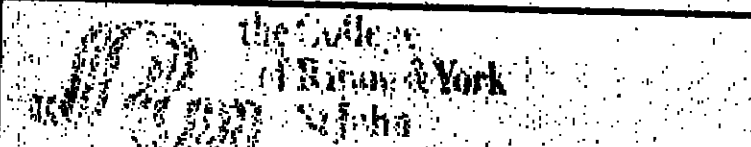
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Nigel Andrew writes: This is selective vision.

Glasgow-style. If Dr Davis wants to bandy quotations, how about these? "...the Glasgow Group go beyond exaggeration to the 'reaches of imaginative hyperbole'." "Far from being scientific the critique is repeatedly and fatally flawed". "In short, even with more than 800 pages in which to develop and sustain them, the Glasgow conclusions simply do not stand."

I could go on. The whole tenor of Harrison's book is as represented in my short (and, therefore, simplifying) review. Had this been distorted, I am sure I should have heard from the author by now. And I did not believe the Group's legs were now shot from under them: that was, God knows, a conditional clause.



No expense...

Sir - P J Evans asks (TES, February 14) whether Enfield's 8p per mile for travelling to parents' evenings can be beaten. For such activities (R for when) West Sussex plays precisely zero: this must be the record.

True, there is a working party looking into it, but teacher-members thereof cannot claim travel allowances, and even have to buy their own cup of tea.

MIKE BRAYSHAW
Secretary
West Sussex Federation
NASSAU

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Hitting home

JIM SMITH

Every school must face the problem of ensuring that information intended for parents actually reaches them. A quick survey within our own school confirmed the suspicion that this was far from the case.

Admittedly these snippets of information were being issued far too frequently, sometimes twice or thrice a week, and our pupils (or unpaid postmen) were proving far from reliable. Too often that important message was found lying discarded in the playground, having first adopted an unmistakable aeronautic appearance. Presumably the pupils (or unofficial censors) had given the message a cursory glance and concluded that this was one gem of information that their parents could well do without.

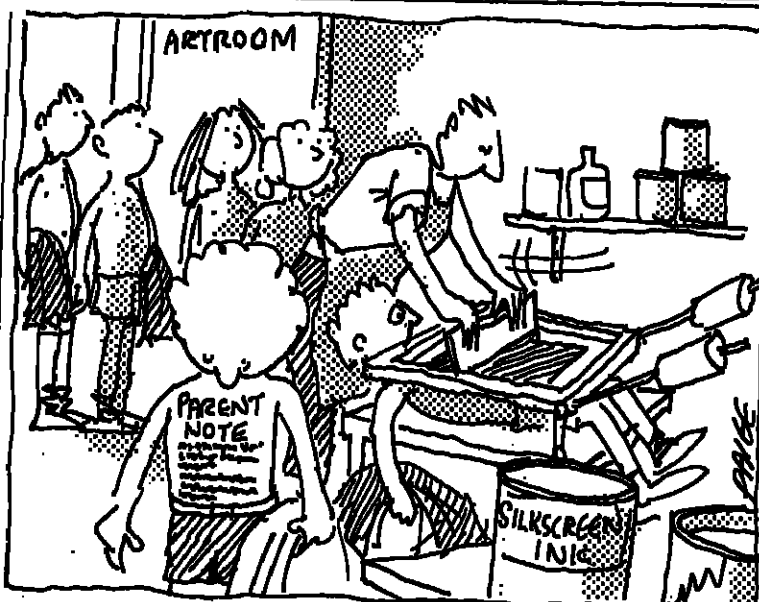
Even messages that successfully arrived in the home did not of necessity get passed to the reader for whom they were intended. Many parents spoke with frustration of finding letters from school lying forgotten at the bottom of school bags or between the pages of an exercise book.

With the encouragement and support of our Parents' Association, we determined to solve this problem. It was decided that for a trial period a weekly bulletin would be issued to all parents. That this bulletin would be sent out on the same day each week, so that those parents would know when to look out for it.

An initial fear that there would be some weeks when there was too little to communicate has proved groundless. Indeed, the existence of the bulletin has encouraged the teaching staff to pass on more information and make more requests. Without the bulletin this communication would not have taken place.

While I will never be convinced that every single bulletin arrives in the home, I am now more confident of our success rate. The sight of a Weekly Bulletin lying discarded within the school, is very rare indeed.

Glancing back at the bulletins that have been issued over the last year,



they certainly have not been lacking in variety. They include:

- details of sponsored and charity events, theatre visits, family outings, musical and dramatic productions;
- appeals for help, whether toward the completion of our Domesday project, or self-help building scheme, or items for a jumble sale or an old boot for our art room;
- results of examinations and sports day, plus a variety of other competitions entered;
- an explanation of new items within the curriculum, extra-curricular opportunities available and new examinations in the offing;
- even the harsh reality of industrial action seems softened when read within the context of the bulletin.

So what of the consumer? What does the parent think of the Weekly Bulletin? Last month the readers were invited to comment upon the success of the venture, highlighting any strengths or weaknesses and giving any suggestions for improvement.

Over 300 written replies were received and every single one echoed the advice: "Keep it going!" The initial reasons behind the introduction of the bulletin were confirmed and endorsed by the parents, with such comments as: "I know when to expect it—same day each week, once a week;" "All the events are brought together on one sheet;"

pathy for those who occupy the classroom, and continue with an unhindered passion to improve the lot of those who distance themselves from the actual job of teaching of children.

While union leaders and the hierarchy of the large comprehensive earn fabulous salaries, many of the classroom teachers receive a pittance in comparison.

Many young teachers earn £50 a week less than the average national wage for the country. A teacher on Scale 1 must devote 12 years of service before attaining the average national wage. It is quite evident that the unions have no compunction at all for the lower scale teacher, particularly those unions who want a blanket increase again.

Any teacher worth his or her salt need not be afraid of accountability, but the weak director of education, HMI, i.e. a. advisor, headmaster, head of department and classroom teacher have every reason to tremble at its introduction, providing the change is to the genuine one, and not only directed at those who occupy the classroom.

There is one thing for sure, teachers' unions would be first on my list to be accountable, and teachers' salaries would be first on the list of priorities.

Spare a thought for those teachers who recently retired on Scale 1, denied to spend retirement penny pinching because of the uncaring and feeble teachers' unions. A lump sum of £12,000 and an annual pension of £3,500 after a life time of paying 6 per cent of their salary towards the great promised golden handshake after 40 years of service, while the poor academic failures, plumbers, gas fitters, electricians, plumbers, are laughing all the way to the bank.

I started teaching when I was 30 and spent 16 years on Scale 1. With the advent of secondary education I was promoted to Scale 3, 4, and 5, and now as a retired teacher it saddens me to discover that the welfare of the poorly paid young teacher is still not foremost in the unions' minds.

Bill Samuel recently retired as head of a comprehensive school in the north of England.

Assessment on the cheap

SHAN OAKES

I have recently received from the Northern Examining Association a trial marking "booklet" containing photocopied essays written by candidates for the Joint GCE O-level and CSE Examination in English, Syllabus B.

I am expected to mark these and give them grades between O-level A+ and CSE 5 and then discuss with my colleagues the criteria I have used in reaching these decisions.

The "booklet" of sample essays runs to one hundred and eighty-three sides of A4—mostly handwritten text. The work of six candidates is represented by five assignments apiece—three essays, the equivalent of about five hours' marking. Since September I have had to undertake this task three times.

As a scale one teacher I am timetable-able for twenty-four hours of teaching each week and the "free" time left on my timetable amounts to less than five hours even when I do not have to cover for absent colleagues.

Calling it "free" time is a misnomer, because one is perpetually struggling to keep up with the ordinary marking and preparation for lessons, along with administrative and pastoral matters, for which a scale one teacher has considerable responsibility.

It should also be pointed out that, as a department, we do not have any space on the timetable allocated for us to meet. Hence, issues such as standardisation of grade-related criteria have to be dealt with outside school time and this kind of discussion, by its very nature, is a lengthy process if it is to be effective at all.

I would, therefore, suggest that this method of standardisation of assessment is ungainly and time-consuming. If the examination boards were paying teachers a realistic hourly rate for the time necessary for grading the trial essays, and discussing how grades have been arrived at (and there is often much disagreement), then the examination boards would, I am sure, find an alternative method.

We have developed alternative and more efficient methods. Information can be circulated by means of suitable documents and collective decisions can be made by means of consultations within normal school hours.

In some cases, the action has produced benefits. The lack of parents' evenings has caused many schools to contact those parents who need to be consulted about their offspring instead of giving blanket consultations. In many cases, these are the parents whom we do not normally see at parents' evenings. The net result has been the development of a more professional and efficient approach to parental consultation.

There may be some casualties. Out-of-school activities which are heavily subsidised by staff time, such as drama, music and sports, could be at risk. Already we are seeing new colleagues and new pupils who have never been involved in extracurricular activities.

I have often heard teachers suggest that the very existence of their department is threatened if they do not put in a considerable number of hours to train sports teams or performers. But is this a reality? I personally doubt it. Does society place so little value on sport, music, dance and theatre that they can only be tolerated if teachers are prepared to subsidize their development unpaid and in their own time?

If supply of new talent dries up, the supply of new talent dries up.

Time alone will tell but it seems to me that there will be two consequences. First, the length of the teachers' day will be greatly reduced. We have all seen now that meetings held after school hours are unnecessary and that the teachers' day should be extended to cover the time when the school is open.

Teachers already work flat-out with very little time in school to do anything other than actually teach. It is unreasonable to expect them to fit yet more work into no time. In other jobs, work unfinished today waits until it can be done—sometimes for several months. Teachers' work comes clamouring into the classroom in fresh batches of thirty every thirty-five minutes.

The total time put into this assessment procedure will amount to more than twenty-five hours of "overtime work" for which I shall receive £120 (20 pence per candidate).

Apart from the fact that teachers do not have any time in which to do this extra, and extremely tedious, work, why should they do it for the peace they are paid for it, when they are not paid properly for their teaching? My own annual salary, as form tutor and teacher with five years experience is £8280.

If it is decided that internal assessment is fairest for the students, then it must also be recognised that it is fair to the teachers they must have lighter teaching loads (as they do in other countries) and supply cover must be provided to take the classes of teachers involved in standardisation meetings—whether internal or external.

Internal assessment saves the examination boards a great deal of money, but, like many other aspects of education in the present climate, at the teachers' expense.

Shan Oakes teaches at Beverley High School, North Humberside.



The shift must start in the schools

Sir Keith Joseph has called for "reasoned discussion and argument" about his (much criticized) Green Paper on Higher Education into the 1990s. "You could help me best by persuading the tax-paying public that their money spent by the universities is well spent and that extra would be a sound investment." Michael Brock, Warden of Nuffield College, Oxford, has taken up the invitation, and we print here extracts from his response to Sir Keith.

The trough which has followed the soaring and extravagant hopes about higher education entertained in the 1950s and 1960s is no more comfortable for you than for us. The Government's main concern is "the evidence that the societies of our competitors are producing, and plan in the future to produce, more qualified scientists, engineers, technologists and technicians than the United Kingdom." This leads the Government to believe "that it is vital for our higher education to contribute more effectively to the performance of the economy". It is your main aim, to promote a "modest shift within British higher education in favour of science and technology".

Everyone shares the concern; but what are the grounds for the inferences drawn from it? Why should defects in our economy be attributed to inadequate support from the higher education system? The fullest comparative analysis is the one by S J Praiss, in which the British and West German educational systems are compared for their effects on the labour force. Dr Praiss did not locate the crucial superiority of the German system as falling within higher education at all. "The essential difference between Britain and Germany," he wrote, "lies not in the proportions with university degrees (or their equivalents), but in the proportions with intermediate qualifications... The greater part of the German workforce—60 per cent—falls into this intermediate category, compared with only 30 per cent in Britain. The proportion of the workforce without vocational qualifications is correspondingly greater in Britain."

In the education of science graduates Britain did not lag behind West Germany. In those fields the British graduates of 1976 outnumbered the German, Germany led by 5,600 in engineering and technology, Britain by 12,600 in science... The position has not changed materially since Dr Praiss wrote. By the latest figures, 34 per cent of UK graduates are in science and engineering, against 22 per cent in Japan and 18 per cent in both Germany and the USA...

The call for the "modest shift" seems to rest partly on a dubious classification of degree courses. According to the Green Paper, the ability of an economy "to develop the talents of entrepreneurs and to support their achievements" depends on the production of "more qualified scientists, engineers, technologists and technicians": the supply of "highly qualified manpower" depends on persuading "more youngsters to opt for these relevant subjects", that is, for "courses of study of particular value to business". When the notion of "relevant" degree

courses is first mooted by student radicals some 15 years ago there was no doubt that it needed to be enlarged and refined. Now that it has been reproduced in the Green Paper it still seems susceptible to these processes. In the first place, it is not clear why large areas of social studies should be regarded as less "relevant" to the world of business than scientific or technological study. The importance for the intending entrepreneur or manager of the knowledge, and the habits of thought, acquired by rigorous degree work in such subjects as economics, law, industrial relations, and industrial sociology, is surely beyond dispute. Secondly, it would be mistaken to under-rate the indirect vocational value of many degree courses which do not seem vocational at first sight.

The similarities between Britain and West Germany in output of graduates were outlined above. There is, however, one significant difference. All German graduates will have pursued studies in the maths/science group for the *Abitur* until the age of 19. The two higher education systems differ essentially, not in the proportion achieving degrees in science and technology, nor in the nature of the two sets of degree courses in arts and social studies, but in the educational which the arts and social studies graduates of either

country will have received before they embark on degree work.

The propositions about British economic ills which underlie the Green Paper are thus open to question. Nonetheless the case for vigorous efforts to sustain science and technology in higher education is extremely strong. If a "modest shift" towards those studies had been the prospect, there might have been more than one view about the priority to be accorded to it. This is not the prospect, however, in British higher education we are threatened with a drift away from these subjects. "The increased numbers of science and technology places in public sector institutions planned... for... 1984-85... have not been fully taken up" according to the Green Paper. To check this drift will be of the utmost importance and extremely difficult. In these fields there cannot be enough applicants for degree courses if there are too few good teachers in the schools. In 1984 30 per cent of those teaching physics, and 26 per cent of those teaching mathematics, held no qualification in those subjects. At February 5,

"There is a shortage of applicants in these subjects because this is both the only leading country in which a majority of 16-year-olds leave full-time education at that age, and the only one in which the choice against maths and physics may be made at 15 or even younger."

1986 the maths and science PGCE entry for secondary school teaching was 30 per cent down on last year's entry at the corresponding date (and last year's figures already showed a decline). The figures for particular subjects are as bad as the aggregated total, chemistry being down by nearly 35 per cent, computing (where the numbers are very small) by 54 per cent, maths by 26 per cent, and physics by 29 per cent. According to recent reports, the graduate physicists entering teaching now represent only a third of those leaving the profession.

In the Green Paper these shortages, present and prospective, in "appropriately qualified manpower" seem to be attributed to "inflexibility" in higher education, and to the universities' insufficient "ability to adapt to change". The grounds for this criticism are not clear. When have the universities shown themselves unable or unwilling to provide enough places in science and technology? The record surely shows that they provided these places in the 1950s and 1960s until they were deterred by empty benches in the laboratories...

Undeniably overcoming this disability requires, in the words of the Green Paper, "action at the school level". In British institutions of higher education admit, in every subject, those applicants who are judged most likely to benefit themselves and their fellows by doing a degree course...

If an increase in the qualified applicants for "technological and directly vocational degree courses" could be achieved, the "modest shift" in higher education towards science and technology would follow almost automatically.

This shortage of applicants in science and technology results from the British system of early specialization combined with short, intensive honours degree courses. This system includes admirable features; but against them must be set a most serious drawback. Unless very careful counter-measures are taken, it is biased against science and technology. The answer lies in this bias in our system. It is not that British 16-year-olds are unaware of employment prospects... There is a shortage of applicants in these subjects in Britain because this is both the only leading industrial country in which a majority of 16-year-olds leave full-time education at that age, and the only one in which the choice against maths and physics may be made at 15 or even younger...

If British academics dislike premature specialization, we may be asked, why do they retain university entrance requirements which promote it? The first reason is encapsulated in the Government's policy of raising degree standards without any lengthening of courses, in some honours courses if this is to be done there must be substantial reliance on what has been learned in the sixth form. Secondly, sixth-form specialization is supported at least as much by competition

for university places as by university "course requirements". Declarations in favour of broader sixth form studies make little difference. Whatever is said, most aspirants for university places, and most of those who advise them, believe that the last word in selection will lie with the specialist in their intended degree subject...

The measures required in the secondary sector to arrest the drift from science and technology were set out authoritatively in the Dainton Report in 1968; and there is no call for me to enlarge on them. There is an urgent need for "introductory courses of the highest quality in science and maths for younger pupils", and for "positive and strong incentives to recruitment of more graduates of high ability to science teaching." Very large gains could be obtained from such measures, especially among girls...

Where choices for higher education are concerned the Government brandishes both stick and carrot. The first is represented by the policy of putting arts provision "for the most part" in the university sector. I am not expert enough to be

able to interpret what this may entail for the public sector of higher education... But the Government should remember what the effects of very "uneven" competition could be. Nothing would be more disabling for the technology departments of an institution than a reputation as "academic ghettos", the parts of the institution where its high standards in admission and degree work scarcely applied.

The "carrot" is represented by the repeated references in the Green Paper to possible financial inducements for study in science or technology: "reform of the system of student support from public funds," we read, "could... increase the incentive for students to consider more carefully their choice of degree subjects". The abandonment of the consultative paper on student support makes odious any but the most general comment on this possibility. If financial inducements in choice of degree subject are in question, an adjustment in the degree student's grant does not look like the crux. The most effective measure would surely be the payment of a modest, severely means-tested maintenance grant to those of the 16-18 age group who were staying in full time education, and following a programme which included study for at least one A level in the maths/science group. In view of the potential value of such work to the country it would seem reasonable to put those doing it on a par financially with the young people on the Youth Training Scheme. Some reduction in unemployment benefit paid might presumably be offset against the cost of such grants. The difficulty of achieving arrangements whereby fifth-formers from working class homes stay at school and realize their full potential hardly needs to be stressed...

The object of such measures would not be to induce schoolboys and girls who had been thinking of specializing in arts to go to the other end of the spectrum and to embark on a specialized course in maths or science. It would rather be to draw some of those inclined to arts towards a middle way. There is evidence that such a movement would be welcome, not only to the Government and to higher education authorities, but to many of those who were actually facing these choices. The proportion of sixth formers who resist the pressures of the system towards complete specialization has been growing. Between 1977 and 1982 those gaining university places with arts A levels fell by nearly 18 per cent while the corresponding science figures rose by more than 8 per cent; but those entering with mixed A levels increased by 15 per cent.

In 1982 11 per cent of the four-A-level candidates, and nearly 9 per cent of those with three A levels, who were accepted for science, technology, and engineering courses in universities held A levels in both mathematics and arts/social studies. In higher education there has been a corresponding growth of bipartite or

modular degree courses, such as engineering and economics, where only one of the components lies in the natural sciences. In the universities at least there seems to be no problem about the quality of the applicants for these courses...

It would therefore be essential, in any attempt to influence choice of subject by financial inducements, that they should be offered to those studying for "mixed A levels", or for "mixed course" degrees. They should not be offered merely on the strength of an AS level subject in maths or science, desirable though it is that the new AS levels should be widely used...

The measures discussed would be designed to check a dangerous drift in the short term. The Vice-Chancellors call for a "fundamental reappraisal of the sixth-form curriculum in the whole United Kingdom" rests on strong grounds. If such a reappraisal is to be made convincing, however, there has to be a prospect, for the longer term at least, that the Government will contemplate a lengthening of some degree courses... It is to be hoped that the Government will institute a thorough investigation of possible policies for delaying the choice of subjects for study in British schools. The inquiry should be concerned with the effects of the adoption of any such policy on the whole pattern of Britain's post-16 education. It should not be confined to the impact of a new sixth form pattern on the higher education system, since many sixth-formers do not go on to higher education; and, if the Government's plans prove effective, this number will increase.

It would be faint-hearted to suppose that, even in the long run, no more can be achieved than to prevent a deterioration from the existing position. What would be the effects on the higher education system of a "modest shift"... In favour of science and technology? According to the 1982-83 figures in Tables 3 and 4 of the Green Paper, Annex B, the total annual cost of university students in science, technology, and engineering exceeded that of arts studies by 75 per cent on average, while in polytechnics the recurrent annual cost of the first group exceeded that of the second by an average of 45 per cent. Moreover, the premature retirement schemes of 1981-84, led, in the Comptroller and Auditor General's words, not only to "a sharp deterioration in university student-staff ratios", but to "a greater than average reduction in posts in engineering, technology, mathematics and computer sciences, which it had been the intention to protect." Thus the university departments which would be asked to receive the extra students are the very ones rendered least capable of doing so.

"The most effective measures would surely be the payment of a modest grant to those of the 16-18 age-group who were staying on in public education."

The ills which form the principal theme of the Green Paper, and of these comments, cannot be cured without some extra expenditure. In the short run much of this would probably be needed in the secondary, rather than the higher education, sector; but, if the "modest shift" to science and technology is to be achieved without a fall in degree standards, there will have to be better, and more consistent, funding in higher education too...

Why should the taxpayer agree to pay for more science and technology places in higher education when he is told that the existing places "have not been fully taken up"? It is even plausible to call for a "modest shift" to science and technology, coupled with a rise in degree standards, during a period of decreasing and fluctuating funding? We need a convincing set of plans to remove the greatest defect in British post-16 education. It is not difficult to establish that British universities are admired the world over, and that their costs per graduate educated are very low by international standards. For the taxpayers this is not enough: they question whether higher education is yet delivering all the goods which are needed most. If it could only be shown that effective plans for post-16 education had been made and agreed, people would surely recognize "that extra would be a sound investment".

Uncaring unions

BILL SAMUEL

After a stubborn lapse of nearly one year, the teachers' unions have again lacked unity in achieving a settlement with the lower-paid in the middle.

The unions have a history of ineptitude in safeguarding the interests of the classroom teacher. The teachers themselves lack common sense, or they would not have tolerated that monstrous monstrosity, the teachers' salary scale, for so long.

In the meantime, headmasters have moved ahead in the financial stakes. It is possible in a large comprehensive school for him to earn three times the salary of a classroom teacher, and also for his pension to be bigger than a Scale 2 teacher on maximum salary. The Unions have clearly lost sympathy for those who occupy the classroom, and continue with an unhindered passion to improve the lot of those who distance themselves from the actual job of teaching of children.

While union leaders and the hierarchy of the large comprehensive earn fabulous salaries, many of the classroom teachers receive a pittance in comparison.

Many young teachers earn £50 a week less than the average national wage for the country. A teacher on Scale 1 must devote 12 years of service before attaining the average national wage. It is quite evident that the unions have no compunction at all for the lower scale teacher, particularly those unions who want a blanket increase again.

Any teacher worth his or her salt need not be afraid of accountability, but the weak director of education, HMI, i.e. a. advisor, headmaster, head of department and classroom teacher have every reason to tremble at its introduction, providing the change is to the genuine one, and not only directed at those who occupy the classroom.

There is one thing for sure, teachers' unions would be first on my list to be accountable, and teachers' salaries would be first on the list of priorities.

Spare a thought for those teachers who recently retired on Scale 1, denied to spend retirement penny pinching because of the uncaring and feeble teachers' unions. A lump sum of £12,000 and an annual pension of £3,500 after a life time of paying 6 per cent of their salary towards the great promised golden handshake after 40 years of service, while the poor academic failures, plumbers, gas fitters, electricians, plumbers, are laughing all the way to the bank.

I started teaching when I was 30 and spent 16 years on Scale 1. With the advent of secondary education I was promoted to Scale 3, 4, and 5, and now as a retired teacher it saddens me to discover that the welfare of the poorly paid young teacher is still not foremost in the unions' minds.

Bill Samuel recently retired as head of a comprehensive school in the north of England.

Points of no return

CHRIS BOWES

The most dramatic side-effect of the current dispute is that most of us have seen that many of the hours given to our jobs are not directly concerned with teaching children. We have also come to realize the detrimental effect these extra hours have on our health, tempers and teaching effectiveness.

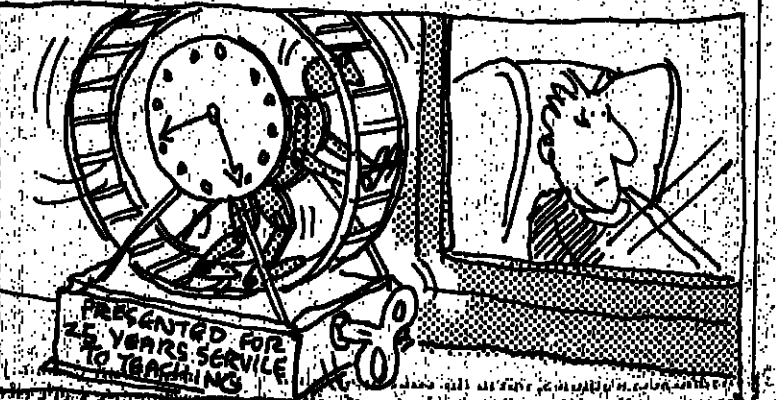
The fact that we feel much better simply by being out of school at lunchtimes will have surprised more than just me. Even more significantly, the ban on after-school activities has shown just how far these commitments have been inducted into our lives.

Now all has been revealed: the lost hours, the tiredness and mood, and the impact of all the fact that schools and departments function perfectly well without them.

Both we and our pupils benefit by our using our off-duty hours for our own benefit. Some of us have been able to take up new interests or revive old ones. Others will have revitalized their family lives or simply relearned how to relax. Others will, unfortunately, have had to use the time to supplement their incomes.

Even in the unlikely event of teachers' salaries being restored to an acceptable level, there will never be a universal return to teachers working the unrealistic hours that were the norm up to the start of the 1983 dispute and the needs of both ourselves and our pupils would not be best served if there were.

Time alone will tell but it seems to me that there will be two consequences. First, the length of the teachers' day will be greatly reduced. We have all seen now that meetings held after school hours are unnecessary and that the teachers' day should be extended to cover the time when the school is open.



Chris Bowes teaches science and technology at Hayfield Comprehensive, Doncaster.

Last week Mrs Thatcher once again revived the radical idea that will not lie down and die – giving vouchers for parents to spend at any school of their choice. Kent was the county that got furthest in investigating a practical voucher scheme after the

Tory victory of 1979. Here Bill Petty, Kent's education officer at the time, describes the snags that sank the scheme. And John Sturt, a Devon head, argues that even the existing level of parental choice can neuter good schools.

Cuts into vouchers won't go

If one has held a senior post in Kent's education service, the subject of educational vouchers frequently arises in conversation. "Wasn't Kent the county which introduced vouchers?" Or "Wasn't it Kent which tried out vouchers and found they couldn't work?" Or "Wasn't Kent the county 'they' stopped from introducing vouchers?"

In fact, vouchers were not tried out in Kent or anywhere else in the United Kingdom. Kent employed a research officer, debated the issue on several occasions and carried out a study in the Ashford area, which produced interesting factual information about parental views and choices. But it did not introduce a scheme.

When people go on to ask: "But what do you think of a voucher scheme?", the blunt response has to be: "What sort of a voucher scheme have you in mind?" The fact is that voucher schemes, and the motives of their supporters, vary. Some see vouchers as a way of giving parents more choice in maintained schools, others as a form of money which would assist parents who wished to send their children to independent schools.

Indeed, some supporters of the voucher concept visualized all schools becoming independent (or rather dependent on parents spending their vouchers on them), although in my view they did not apply themselves to the practical questions involved in such a development.

My own advice was that, despite the obvious difficulties – of which my chief education officer colleagues gleefully reminded me – there was a case for a controlled experiment, given the public and political interest which was being shown. The experiment should, however, start in a simple form.

Vouchers should first be used in one area as a means of allowing a choice of maintained schools in that area. If this proved to be successful – if, for example, it was less cumbersome than other methods of choice – it could be extended to other areas. Consideration could then be given to attaching a money value to the voucher.

This value could be subsequently increased, again subject to the success of the scheme. In other words clear, separate steps would be taken, and, if things were going wrong, a speedy halt could be called without damage being done. This was careful and cautious, but care and caution are vital in schemes affecting the real education of real children.

As far as using vouchers to help parents to meet the cost of independent school fees was concerned, this could be viewed as a political issue for national rather than local decision. There were other methods of giving the help, some of which were totally under the control of Central Government, such as tax concessions. (In the event, of course, the Government chose the assisted places scheme.)

The activity in Kent delighted my fellow CEOs. If they were under local political pressure about "vouchers", they could – and did – rightly say "Let's wait and see how they get on in Kent."

There were, in fact, some fundamental problems. What would parents do with their vouchers? How many would lose them or say they had not received them? And how should consequential complications be dealt with? What would those parents who had sent their children to a school deliberately because it was small say when the mobile classrooms began to arrive and the school began to be no longer a small school? What were their rights? How would the governors of an aided school react, with their particular responsibilities and powers?

An even bigger difficulty for a local scheme soon appeared. While political pressures for some form of voucher scheme were increasing, other pressures were appearing. There was the pressure to contain expenditure on education, and there was the Government's decision to interfere in the financing of local government in new and imaginative ways. One of the latter was the tendency to punish most severely those local education authorities which had followed the Government's financial lead – which were often the very ones most likely to be interested in voucher schemes.

These pressures manifested themselves in a stark drive for a reduction in school accommodation and staff, so as to maximize the savings made

possible by the falling birthrate. And a hard drive of this kind cut across one of the main requirements of a voucher scheme, flexibility of accommodation and staffing. The reduction in the school population was, of course, now making this flexibility possible.

Assume that there are five schools in an area. Each school has accommodation for 100 pupils and is full. The school population then declines by 100 pupils, leaving a total accommodation requirement for 400 pupils.

Under a voucher scheme every advantage lies with keeping five schools, "mothballing" rooms and preserving mobile classrooms. Under an economy scheme the obvious policy is to close one school, using the spare places at the other four schools for the displaced pupils and providing four schools, all full, for 400 pupils.

But this policy, at a stroke, removes the voucher choice completely for the school which has been closed, and makes its success at the other four depend on the parents' use of their vouchers fitting in with the accommodation now available.

The sad truth is that the closure of school accommodation is the simplest way of denying parental choice either by vouchers or by other means. This fact, however, produces a rich area of disagreement and confusion. There has been,

for example, much rehearsal of the disadvantages of "small schools": tiny peer groups; classes which incorporate several age-groups; secondary schools offering an unduly limited number of subjects and options; the uneconomic use of resources.

But, in terms of vouchers and parental choice, all such considerations are irrelevant. The basic issue is the one of choice, and, if a parent wishes his child to attend a particular school because it is a Church school, or because it is in a village and not in a town, or simply because it is a very small school, that factor outweighs all the others.

In present circumstances, however, the cost argument tends to win. Those struggling with intractable budgets can feel themselves compelled to give priority to cost arguments. This is no doubt why some who had been viewed as supporters of vouchers began to whisper: "Of course a voucher couldn't be used, if the accommodation were not available."

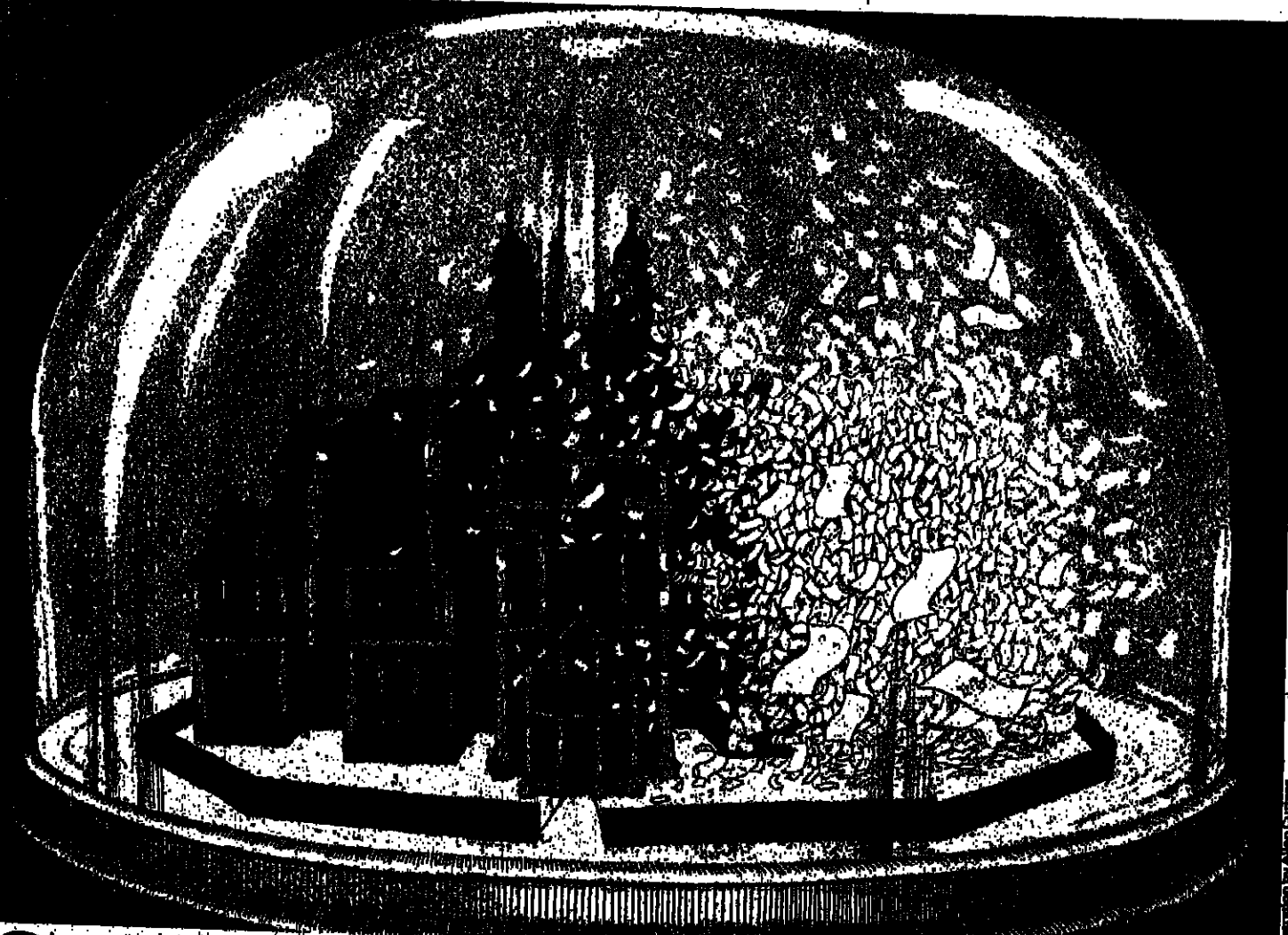
It had always been recognized that lack of space at a particular school might be a problem which had to be faced, but it had also been felt that the vast majority, if not all, cases could be dealt with – given a substantial amount of spare accommodation. Removing that space destroyed one of the main bases of the voucher concept.

Any issue arousing strong political feelings and being well aired in the Press is likely to produce personality clashes, "words in ears", meetings which haven't taken place, "misunderstandings" and all the spicier and more entertaining aspects of government. In Kent, the opponents of vouchers received an unexpected bonus from an active supporter of vouchers who wrote to the Press attacking cricket, apparently unaware of the fondness which many Kent county councillors had for that game ("I say, are you sure that these voucher people are really sound?").

More mundane influences, however, tend to be the decisive ones in matters of this kind. To place one foot on a horse called Vouchers and the other on a horse called Economy would be to take a stance which could not be maintained for long with any comfort.

To mount Vouchers alone might mean being on a horse which couldn't run. To choose Economy would mean a ride on a horse which, although it might buck somewhat, was sturdy and well-tried and going in one clear direction – and meanwhile Vouchers could be comforted as it was led back to the stable.

Bill Petty was formerly county education officer for Kent.



Spoilt for choice

In theory the case for parental choice is irresistible. The parents are the paying customers, even in the maintained sector, and should have the education they approve of. The competition engendered is a spur to achievement and cuts through complacency. This way good schools will flourish; bad schools will wither or change. It is all self-evident.

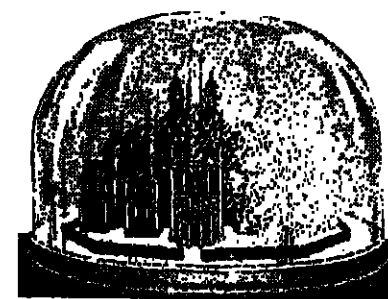
But with education, whenever you find something that seems inarguably obvious it generally means you have fallen into a trap. Parental choice sounds like a harmless selection between two or three schools by a few families that are prepared to take the trouble. In fact, especially with falling rolls, that is the least of what it means.

It will lead, and was no doubt meant to lead, to the steering of populist courses in educational practice. This may seem endearingly democratic; but parliament, you may notice, is careful not to accord to the populist arena of referendum any decisions that really matter.

Such choice, in the present circumstances, will surely lead us towards the American model of community-led curriculum and community-led school organization which have proved neither successful nor enriching; and towards a European model in which headteachers are only the administrators of local policies, have no hand in choosing staff and can exercise no leadership outside the day-to-day routine and time-tabling. Of course in this way you have the chance of getting rid of the very worst schools, but you also face the certainty of neutering those of quality and originality.

I ought to make it clear that parental involvement in all school affairs should be welcomed and is healthy. Most schools are proud to be able to show parents what they are doing, welcome parental help, respect parental opinion, enjoy parental co-operation.

Parent governors are the most important kind, in my book, and parent-teacher accord is often



highest value. The lines that limit parental influence have largely been drawn by historical accident, but mostly they work well.

I will cheerfully answer to parents for the quality of the educational experience that is provided for their children as long as they let me do it my way. Their views on what to value, what to insist on and how to achieve things will be valued; but it has to be by the collective judgements of my staff and myself that we actually proceed.

It is an extraordinary fact that, however enlightened the choice of individual parents may be, the weight of collective parental opinion leans always one way. It must be to do with hankering back to their own school days, and for the values remembered from their youth.

Looking back on a long career in education, it seems to me that most advances have been made by resisting parental pressure, and consolidated later by a process of parental education. Yet we should certainly be accountable to them, and there is the dilemma. Perhaps it is best seen as a test of our skill at interpreting what we do in terms of what parents want.

This will be an unpopular remark, but it has to be said. The exercising of parental choice is overwhelmingly a middle-class activity. There was a time when the effects of choice were governed by the availability of places and popular schools became over-subscribed and could not continue to cream the local market.

With falling rolls, everyone has room. Worse, everyone needs more pupils to protect themselves against the damage that falling rolls are likely to do to the curriculum.

The climate is exactly right, therefore, for parental choice to exert its maximum influence. Yet if a school allows itself to be altered in order to be chosen there is a risk that hundreds of children from homes with perhaps low academic expectations but important special needs of their own are likely to find themselves governed by regimes designed for and acceptable to the minority with the influence.

All this would be bad enough if the choices made could be soundly and logically based. But there is too much hazard in it. Popularity, or the opposite, may come to you by luck, or accident, or by the mysterious folklore that builds up round schools. Once popular, the parents of bright youngsters hammer at your door. Thus your results improve and the popularity with them. Things can be changed, but there is a massive drag factor operating. If a highly favoured school were to be consistently mismanaged and its unpopular neighbour started to be brilliantly handled and set on the right course, it would be 10 years or more before anyone outside the profession noticed. Like turning a supertanker, it takes a long, long time.

Exam results too, beguiling as they seem as instruments of choice, are incredibly misleading. Professionals know how impossibly difficult it is to make a quality judgement between two schools even when they have repeated entry, the facilities to compare intakes, substantial acquaintance with the curricula, and lengthy access to the pupils and staff.

Yet some sort of choice must be made and it is in the interest of the school that it is well made. A good match will mean a confident start and the chance of lasting satisfaction. A mismatch will be much more likely to lead to disillusion and unhappiness.

Even if comparatively few parents can make informed choices that are valid, they can make choices in which they have confidence, and I think I have found what the trick is. It lies in providing them with a pair of young children to act as their guides on their tour of the school after you have answered their questions.

Of course, that way you miss out on the sight of classes leaping to their feet at the sight of the head entering the classroom, but a lot of confidence is built up when parents can question the young guides without a heavy presence monitoring their answers.

It is excellent experience for the children too. Even quite academically limited youngsters rise to the occasion and blossom with pride in the job they have been given. In fact they "sell" the school better than I did.

John Sturt is head of Knowles Hill School, Newton Abbot, Devon.

Parliament without politics

by Nick Baker.



The ritual start to another day's business at the mother of parliaments took place as usual. Honourable and Right Honourable Members, gravely watching the daily procession towards the Speaker's chair, scarcely noticed that the Serjeant-at-Arms, resplendent in velvet knee breeches, was wearing training shoes, or that the Speaker himself appeared to be wearing blue jeans under her heavy gown. Even the suppressed giggles of the bewigged clerks to the House were tactfully overlooked.

As the House (gratifyingly full, despite the absence of a three-line whip) listened to Gerrard Neale, Member of Parliament (Conservative) for Cornwall North, it sounded a good deal more attentive and less rowdy than the BBC would have us believe.

Fourth and fifth-year pupils from Sir Frank Markham School in Milton Keynes were MPs for the afternoon, and the theatre on Milton Keynes' Woughton Campus doubled as the chamber. Gerrard Neale goes to great lengths to get the details and the atmosphere right for his mock parliament sessions, travelling with a small busload of props and costumes. Also in attendance at Milton Keynes were Mrs Neale, helping with the dressing up, and Gordon Martin, a student of international law from Birmingham, Alabama, who is also Gerrard Neale's assistant, researcher, and chauffeur.

Neale aims to give an illustrated and dramatized account of the workings of the Commons, and uses copies of the CRAC booklet, *What Happens When I Vote*, which he co-wrote, to demonstrate what the House looks like in real life. The fun comes with the recreation of parliamentary ritual.

There are enough costumes – parliamentary and legal cast-offs, Moss Bros rejects and a magnificent replica mace, courtesy of a film property company – for eight pupils. They represent the Speaker, his secretary and train-bearer, the bar door keeper, chaplain, and the three clerks to the House. Neale has a good deal of entertaining knowledge about parliamentary panoply.

For instance, while it is not known why the chaplain carries a white handkerchief over his arm, it is thought that it might have something to do with the days when the House had only one speaker, and could not sit unless he was actually in his chair. At this time, the chair incorporated a commode, and could be curtained off when necessary so that the Speaker did not have to leave, even during the longest of sittings. The handkerchief, Neale surmises to great amusement, was for the chaplain's nasal protection.

As the House gets down to the real business of the day, it becomes clear that Neale is deliberately avoiding politically contentious issues to use as examples. In fact at Milton Keynes, the vote is on a motion to give the Government (but not the Opposition) an extra week's holiday. The closeness of the aye/no vote in the chamber ensures the need for a division, and Neale describes how the division system works.

After the sitting, pupils' questions are encouraged, and Neale answers on why there are not more women in parliament, what happens when a vote is tied, and how the Speaker remembers all the members' names. Asked, after the one-and-a-half-hour session, whether the proceedings would help them understand the workings of parliament should they decide to visit the Strangers' Gallery,

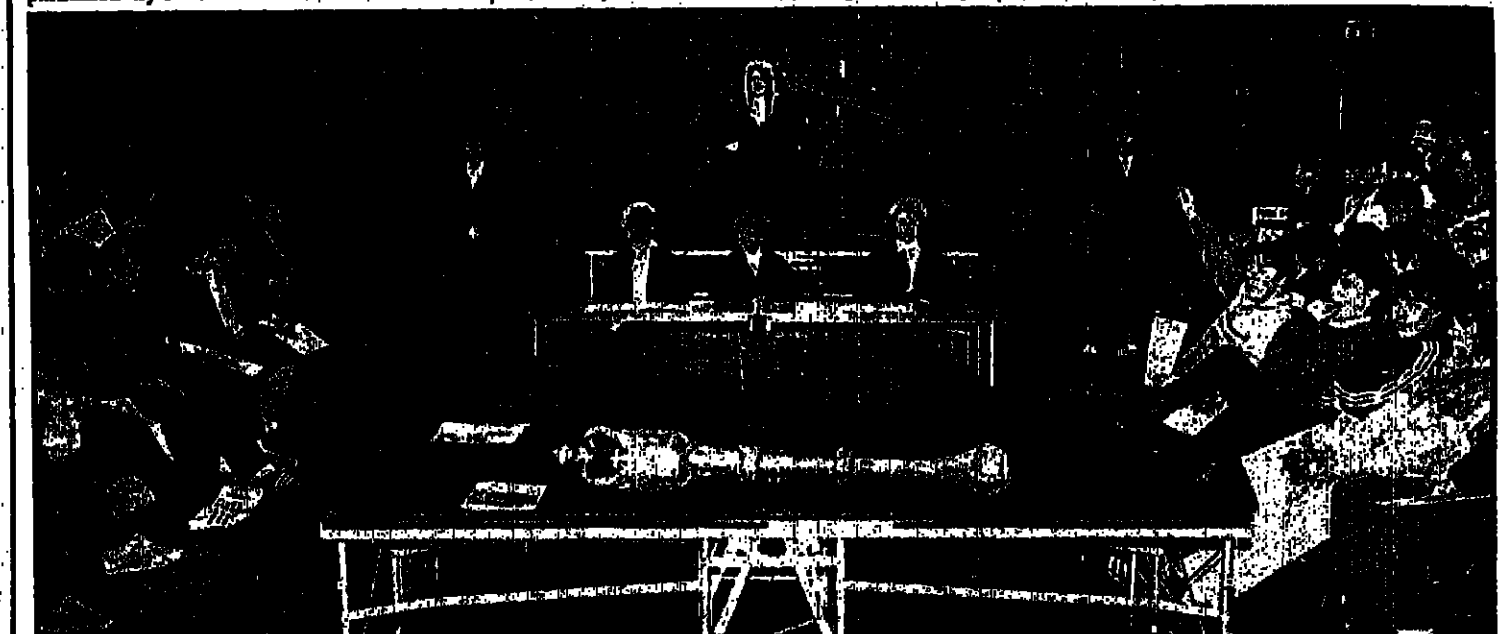
all the pupils I spoke to responded with a firm yes. A large majority of pupils also correctly identified Neale as a Conservative, although they had been given no formal clue to his political identity.

Neale stresses that he does not use the sessions to make political capital. They came about when he was invited to talk to a class of pupils at his daughter's convent school. Faced with a larger than expected group of pupils, and two hours to fill, Neale, acting on a "brainwave", rearranged the seats and installed the mother superior/headmistress as speaker.

From the start he saw the value of explaining the process by an event rather than a lecture, and avoided political controversy. "I don't see it as a means of furthering my party's cause," he says. What he is keen to get across is that people become politicians because they feel strongly about issues, whatever their political allegiances.

Neale's political background shows him to be determined in favour of capital punishment (telling Young Conservatives in the year he was elected to parliament that he would personally be willing to carry out the death penalty on convicted murderers) and privatization. These views would never come out in one of his mock parliament sessions. "If it seems in danger of becoming party political, I normally say 'Would you come up to me afterwards and I'll talk to you about it.'"

It's a demanding and time-consuming task, which he has perfected in independent and state schools on both sides of the Atlantic. At the moment, he makes no charge for under-16 groups, financing those presentations out of his own pocket. For others, a charge to cover expenses is negotiated. What is really needed, he believes, is sponsorship.



Once Gerrard Neale (top) has his props in place, the House gets down to business.

Almost all the Latin and Greek courses currently available are relatively modern, and all represent efforts by experienced teachers to overcome problems they have met in the classroom by presenting the material in a new way. Whether those, like the *Cambridge Latin Course* (published in modular form by CUP), which reject it more radically can be shown, at least in the absence of agreement about goals, to be superior to the others is an open question. The merits of *CLC* itself are well known, but developments in linguistic theory are leaving it behind, and it has always suffered from the tendency of all inductive courses to grow so vast and all-encompassing that they threaten to smother teacher and pupil alike. On the other hand, too many traditional courses are chasing too few pupils, so that it might be better if we were able to put our money on one. If both books were in print, I might have a flutter on *The Path to Latin* by R D Wormald and D W Blandford (Longman, Book 1 only, £2.95) as being the most scrupulously detailed and explicit of them all; but perhaps the new Oxford GCSE course, *Quintus* by M D Balme and J H W Morwood (OUP, Vol 1 to appear at the end of 1987) will not only scoop this pool, but actually re-establish a single tradition in Latin teaching in Britain.

A New Greek Course for Schools (obtainable from W A Williams, Jordanhill College of Education, 76 Southbrae Drive, Glasgow G13 1PP) joins *CLC* in holding out the prospect of children of a fairly wide range of ability being able to study the classical languages with pleasure and profit, but is perceptibly more modest and pragmatic. Athenae by M G Balme (obtainable from Austen-Pearish, Specialist Booksellers, 162 Archway Road, London N6 5BB, in two parts, £4.50 each) is a splendid monument to the learning, ingenuity and industry of its author (qualities which will be appreciated by able pupils), but again really contains too much material, although if one could master all of it, one would have learned a lot of Greek by any standards. Everything depends upon the teacher, and I do not see that in the hands of a good teacher either Greek for Beginners by L A Wilding (Faber, £1.95) or *Thrasymachus* by C W E Peckitt and A R Munday (BCP, £6.75) are yet redundant.

It seems to me a pity that so many pupils prepare two set books for (traditional) O level in both Latin and Greek, instead of facing the challenge of "harder" prose and verse unscathed, and therefore having really to know the languages well. Mugging up a few hundred lines of Virgil is not always the rewarding cultural experience it ought to be, and one hates to think that teachers choose this route simply as the easier and more predictable. This is particularly true in Latin, where few, if any, really satisfactory editions are available. (Here, as elsewhere, I have ignored Caesar and Virgil, as being too familiar and too Protean, and in general reserved the right to be selective.) The prospects are much brighter in Greek, where one can use, for example, *Four Greek Authors* by E C Kennedy (Macmillan, £6.95), or one of the excellent editions commissioned by John Betts of the Bristol Classical Press, namely *Xenophon: The Persian Expedition* by J Antich and S Usher (BCP, £4.95), *Plato: Story of Atlantis* by C Gill (BCP, £4.95) and *Homer: Odyssey IX* by J V Muir (BCP, £4.25).

Non-traditionalists are given plain texts in leaflet form, judiciously scissors-and-pasted by their scholarly editors, and beautifully printed, while their teachers may take from the rather over-elaborate handbooks which accompany them as much or as little as they like. So strong is the Silver bias of *CLC* that the only prose authors on offer are Tacitus and Pliny.

At A level, any book of Homer can now be tackled with confidence using either M M Willcock's edition of the *Iliad* (Macmillan, 2 volumes, £9.95 each), which is notable for its light touch, and which has rightly been praised to the skies by recent reviewers, or W B Stanford's *Odyssey* (Macmillan, 2 volumes, £9.95 each), the brightness of which remains undimmed, its philological bias giving it a special lustre. As for editions of individual books: if one is looking for historical and linguistic information, J T Hooker's *Iliad III* (BCP, £4.25) is outstanding, though *Iliad I* and *Iliad VI* by R H Jordan and J A Harrison (BCP, £4.25 each) are also very good, while on the literary-critical plane, Colin MacLeod's *Iliad XXIV* (CUP, £7.95) brooks no rival.

Mark Griffiths's edition of Aeschylus: *Prometheus Bound*, also in the superb *Cambridge Greek and Latin Classics* series (CUP, £8.95), is a heavyweight contender for a place in the syllabus: it is impressive, but does not give the both former quite enough help in construing the text, groaning



Back to the classics

Classics publishing is currently in confusion, with well-intentioned companies undermining one another, and exam boards setting inadequate books merely because they are in print. Keith McCulloch has made a thorough exploration of the field, and picks out the best available texts

as it does under the weight of its rather laborious scholarship, while Sidgwick's slim *Persae* (BCP/Macmillan 1903, £5.75) is surprisingly good.

R D Dawe wears his learning more lightly, and although his very idiosyncratic *Oedipus Rex* (CUP, £8.95) is tough going, it is at least relatively self-sufficient, and offers exactly the kind of challenge which ought to inspire a bright A level student to want to go up to Cambridge to read Classics. J T Kells's *Electra* (CUP, £8.95) must rank as the most humane and accessible edition of any Greek tragedy to be used by sixth formers. W B Stanford's *Ajax* (BCP/Macmillan 1963, £7.95) is sound, but rather dull in comparison. A new edition of *Antigone* by A L Brown is expected from Aris and Phillips soon.

Euripides is inevitably dominated by the Oxford series of commentaries, not all of which are, however, suitable for use in schools. E R Dodds's *Bacchae* (OUP, £9.50) needs no recommendation from me. D L Page's *Medea* (OUP, £8.50), although it solves major problems of text and interpretation so definitively as to put A F Elliott's urbane experimental edition (OUP, £3.75) firmly in the shade, needs extensive supplementation on a more elementary level. I envy any teacher who can issue sets of Hippolytus by W S Barrett (OUP, £19.50); for most of us the appearance of J Ferguson's new BCP edition (£4.95), which boasts a freshly-minted text, will be welcome. K H Lee's *Troades* (BCP/Macmillan 1976, £4.95) is scholarly, and just about usable, but is inclined annoyingly only to tie up ends left loose by previous editors. Far more practically useful is *Hecuba* by M Tierney (BCP/Brown & Nolan 1946, £6.50), which is very much better than its unattractive appearance would lead one to expect.

K J Dover's edition of Aristophanes: *Clouds* (OUP, £3.95) has set the standard by which other such works are judged, although this is not the most entertaining specimen of Old Comedy, and the strong imprint of Sir Kenneth's personality and interests may not be to everyone's taste. C E Graves's *Archiphanias* (BCP/CUP 1905, £5.95) remains useful, while W B Stanford's *Frogs* (BCP/Macmillan 1958, £5.95), thorough though it be, is so unwilling to call a spade a spade that it often leaves the reader scratching his head in puzzlement. Convinced as I am that Classics teachers often spend too much time working over the texts of set authors, I would not shrink from using Alan H Sommerstein's editions of the comedies of Aristophanes (Aris and Phillips, £7.50 each), which offer the best text currently available, with a facing (and fairly literal) translation which does a lot of the work of a commentary, while the exiguous commentary itself is tied to the English.

There is a new edition of Herodotus Book 1 in the Bryn Mawr series - which aims to give just the kind of detailed linguistic help which American college students need, and no more, at a reasonable price, if in a fragile and unpleasant format - by G L Sheets (distributed by BCP, £7.95). W G Waddell's *Book 2* (Blackwell/Methuen 1939, £7.50) is almost overwhelmingly full but winningly enthusiastic. E S Shackburgh's *Book 6* (BCP/CUP, 1989, £6.95) has aged amazingly well, and is still well worth using. The edition of *Book 8* by J E Powell (BCP/CUP 1939,

is reflected in the quality of the editions of his orations used by sixth formers. R G C Leven's *Verrine V* (BCP/Methuen 1962, £6.95) is the exception that proves the rule, and is the best possible introduction to Cicero's Latinity, and in particular to his rhetorical style. Perhaps, at bottom, R G Austin's *Pro Caelio* (OUP, £7.50) is a more scholarly edition, and when Austin is good, he is undeniably good, but the way his commentary is presented seems designed to hinder one from getting to the bottom of it. In comparison, *Pro Murena* by C Macdonald (BCP/Macmillan 1963, £4.95), though quite usable, seems to me to set its sights a little low, while J D Denniston on *Philippics I & II* (BCP/Oxford 1926, £5.95) is heady stuff, but very austere and historical. Continued exposure to D Stockton's *Thirty Five Letters* (OUP, £3.75), good value in every way (if a bit out-of-date in this post Shackleton Bailey era), can only help to restore his reputation. Study of his philosophical works can begin with A E Douglas's edition of *Tusculana I* (Aris & Phillips, £7.50).

Salust's two monographs make perfect set-book material, and only a blockhead could fail to warm to the idiosyncrasy of his style. P McCuslin's *editio minor* of the *Bellum Catilinae* (BCP, £5.95) deserves to be supported, but not to the exclusion of L Watkins's *Bellum Jugurthinum* (BCP/UTP 1971, £6.95), a genuine labour of love.

If Livy is not a great Latin prose author, then who is? But his fate really is a dismal one, only the editions of Book 21 by P G Walsh (BCP/UTP 1973, £5.95) and of Book 30 by H E Butler and H H Scullard (Blackwell/Methuen 1941, £5.50) inspiring even the most lukewarm enthusiasm.

It is Tacitus who has captured our imaginations, so much so that no other prose author in Latin or Greek has been honoured with such a magnificent procession of commentaries at this level. N P Miller on *Annals I* and E C Woodcock on *Annals XIV* (Blackwell/Methuen 1959, 1939; £6.95, £6.50) are excellent on his Latinity, while Miss Miller's much later *Annals XV* (Macmillan, £4.95), though still very good, is too concerned with the pedantic question of whether Tacitus is telling the truth or not. Agricola by R M Ogilvie and Sir Ian Richmond (Oxford, 1910, £0.50) is probably the best of all the books I am reviewing here. All that can be said in favour of *Historiae I* and II by A L Irvine (Blackwell/Methuen 1952, £6.50) is that it is better than nothing at all.

Perhaps it would be stretching a point to characterize Lucan's *De Rerum Natura* as a sample of what Roman poetry looked like before Virgil got his hands on it; but before the publication of E J Kenney's exemplary edition of Book 3 (CUP, £8.95) there was at least some excuse for not being able to take him quite seriously as a poet and as a philosopher in his own right: now there is none. In this company even C D N Costa on Book 5 (OUP, £7.50) looks a bit pedestrian, but *Selections* by G E Benfield and R C Reeves (Oxford, £3.50), the aims of which are quite different, has lost none of its value, and acquired a fascinating period flavour. I have not yet seen P M Brown's new BCP edition of Book 1 (£5.95).

If there is any case for saying that students should be given nothing but a plain text and their teachers do the explaining, it is at its strongest where Horace: *Odes* Books 1 and 2 are concerned, since there the commentaries of Nisbet and Hubbard are available. To use Gordon Williams's edition of Book 3 (Oxford, £3.75), in which each ode is followed by a translation and a stretch of practical criticism, brave though this attempt to ditch old shibboleths was, looks like a *pis aller*, although in comparison O A W Dilke on *Epistles* Book 1 (Blackwell/Methuen 1966, £4.50), though reliable, does seem dry and dull. All four books of *Odes* can be studied in Kenneth Quinn's Macmillan edition (£9.95).

Ovid in his sphere is as fortunate in his editors as Tacitus in his. Amores 1 by John Barsby (BCP/Oxford 1973, £4.95) is laid out in the same way as Williams's *Horace*, and strikes me as lively where the other is humdrum and effortless where it is laboured. As for the *Metamorphoses*, A A R Henderson on Book 3 (BCP, £4.95) is hard to beat, while A G Lee on Book 1 (BCP/CUP 1953, £4.95) has a charm all of its own, and an authority which belies its unpretentiousness; and G M H. Murphy on Book 11 (BCP, £4.95), if he really is the runner up, is certainly *tertius inter pares*. I am not blind to the merits of A S Hollis on Book 8 (Oxford, £6.95), but it does betray its origin as a B Phil thesis, and is not really aimed at sixth formers. Familiarity with Ovid's hexameters as an unseen specification will be achieved most painlessly by using D E Hill's edition of *Metamorphoses I-IV* with facing translation (Aris & Phillips, £7.50).

One can only regret the fact that Cicero is widely thought of as a flatulent hypocrite and a bore; but this more-than-a-century-old prejudice

Uninvited Guest: the Intimate Secrets of Television and Radio. By Laurie Taylor and Bob Mullan. Chatto & Windus £9.95. 0 7011 2973 5.

It is fashionable to take television seriously, and perhaps particularly fashionable to take a positive view of it. This is certainly what Taylor and Mullan are doing in this breezily readable book. Their thesis is that, "far from being 'culturally deleterious', television often seems culturally productive". Television viewing is an experience as various and multi-dimensional as television itself: it has nothing to do with the state of paralysed total receptivity imagined by the anti-TV school. Such caricatures of a mesmerized population are partly the result of studiously ignoring the viewers' own accounts of their own experience.

Such accounts are, God knows, readily enough come across wherever two or three viewers are gathered together. But to be more systematic about it, Taylor and Mullan enlisted the help of The Research Business, "a leading qualitative research company", and drew on the audience-monitoring resources of the IBA, BBC and BARB. The aim was to find out directly what viewers thought of different kinds of television, of individual programmes and "personalities", what their viewing habits were, their emotional involvement, their thoughts and feelings about television - in short, all the sorts of things that most viewers talk about habitually and uninhibitedly. Radio was also brought into it, but in a smaller way.

The findings from these assiduously recorded and analysed vox pop sessions form the bulk of the book. They are quoted at some length - especially the lively discussion groups - and what is said is generally quite predictable, sometimes surprising, and in bulk

more than a little depressing. This sort of talk is far more fun to take part in than to overhear for hours on end. Taylor and Mullan's commentary, with its nice line in interesting asides, is a welcome leavening, and they wear their scholarship lightly. There is plenty of illustration too, including a set of rather mysterious photographs by Nigel Ingalls of people watching television.

Taylor and Mullan get very close to the everyday reality of viewing and to the strong emotions which can be involved. Their subjects are of all ages and classes, and they talk about most kinds of television (but only a few kinds of radio). Video is considered, but there is no mention of remote control, which has recently had a marked effect on viewing habits, particularly in families. Quite rightly for a book of this kind, attention is paid to the strong symbiotic relationship between television and the tabloid press, which now has a corps of 40 or more full-time television reporters. It is fast becoming impossible to enjoy a television soap fully without some awareness of this vast amount of background "information".

The mass of viewers emerge from this study looking very sensible (if, in some cases, obsessed), not fooled by television much, but enjoying it immensely, quite discriminatingly, and sometimes a little guiltily. The bulk particularly attaches itself to their children's viewing habits - and probably with good reason. But this book is overwhelmingly positive in its endorsement of television, and being a view from ground level, as it were, it does not really address the larger issues raised by the growing centrality of the medium. The emphasis on entertainment is absolute - but all the evidence, here and elsewhere, suggests that many viewers regard television as an all-entertainment medium. Some of the questions put to these

subjects, and some of the tables and analyses, seem to be merely frivolous. But certain of the figures quoted are genuinely surprising - for example, that nearly half the audience for *Dangermouse* is over 55. I am also indebted to this book for the information that four million household radio sets never get played at all, and that sitting down to listen to the radio is now considered aberrant behaviour. Oh dear.

Nigel Andrew

Ad lib

Commercial Television and European Children. Edited by Scott Ward, Tom Robertson and Ray Brown. Gower £18.50. 0 566 05073 0.

There is little to hold the layman's attention in this stolid presentation of research papers, originally delivered to a multinational conference on television advertising and children held last year. Covering the areas of age-related differences, parent-child relationships, cognitive processes and the socializing effects of advertising, the book's findings range from, to this layman at any rate, the seemingly trivial ("children ask their parents to buy television advertised products 13 times a month") to the potentially useful ("the vast majority of children understand the purpose of advertising by the age of eight").

Largely uncontroversial, the book is aimed at market researchers, advertising persons and, possibly, some psychologists.

David Dale

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Mystery man

The Secret Life of John Logie Baird. By T McArthur and P Waddell. Hutchinson £16.95. 0 09 158720 4.

This contribution to modern history suggests that it is not only the personality of J L Baird which appears to have been but partially revealed to the public; there is also mystery about details of some of his research and inventions.

Baird is, of course, generally accepted as a most significant contributor to the development of television. By 1925 he had brought his apparatus to the stage when he was able to provide public demonstrations of the transmission of outlines of simple objects. January 1926 saw the historic exhibition of an improved apparatus to members of the Royal Institution, and three years later came the first transmission by Baird of trans-Atlantic television.

All this, the subsequent experimental BBC service, and Baird's extensions to colour, stereoscopic and large screen television have been ex-

pansively documented and written about. Expensively, but not (in the view of the authors of this volume) completely. There seems to have been much hidden, even, perhaps, suppressed. Did, for example, Baird engage in "top security secret signalling" well before and during the war? What was the relationship of Baird with Watson-Watt - or, for that matter, with John Reith? How did he associate with the Government, in particular with the service ministries?

In their wide speculations about aspects of Baird's work which constitute their "inquiry into an accepted story, already riddled with contradictions", Tom McArthur (a reporter and feature writer) and Dr Waddell (a university lecturer in engineering) have unquestionably unearthed new facts that put a different gloss on a familiar portrait. Their biography considers the personal life and the technological achievements of a great pioneer and each facet is intriguingly revealed afresh.

F W Kellaway

Brain drain

Turing's Man - Western Culture in the Computer Age. By J David Bolter. Penguin £3.95. 0 14 026657 5. The Quantum World. By J C Polkinghorne. Penguin £2.95. 0 14 022663 2.

Bolter sees modern man as informed by imagery from computer technology, as the ancients used pottery and spinning for their metaphors of life: thus, "a program for the brain" is not diminishing, but is typical of the traditional use thinkers have always made

of the technology of their age. Unfortunately, he is both sloppy and patronizing; I am sure no reader will understand Turing's achievement from his exposition - I suspect he does not himself.

Polkinghorne's book for the "serenally mathematically innocent" is precise and clear; every image is exact and excitingly informative; the limits of every analogy and the objections to every view justly and clearly set out.

John Laski

Calling the shots

France 1789-1815: Revolution and Counter-revolution. By D M G Sutherland. Collins £14.95. 0 00 197178 6. Fontana £4.50. 0 00 696018 4.

This is a book aimed at a "general reader" which also presents a fundamental reappraisal of one of the most vividly discussed periods in European history. That is in itself a remarkable achievement and it is due as much to the author's ability to synthesize a mass of disparate and often contradictory material as to major shifts of emphasis in historical studies over the last 20 years or so. Not everyone will be in sympathy with Sutherland's revisionist approach but I would be surprised if the book did not quickly become part of a basic canon, at least as a text to be studied alongside others.

What impresses me most about Sutherland's writing is the ease with which he moves from terse narrative to concise analysis and back. Although there are moments when attentiveness to detail blurs the general picture, the sections on the events of 1787-1789, on the flight to Varennes, on the Sans-culottes, on Jacobins and Cordeliers, Girondins and Montagnards, are all extremely well handled. And the short chapter on the Consulate is one of the best I have encountered. When, as he must, he comes to the Revolutionary Wars, his succinctness is extraordinary and yet he still manages to fascinate the reader.

Equally commendable is the resolute attention Sutherland pays to what was happening in the provinces. Exploding the myth that Ancien Regime France was merely a centralized state, he rightly stresses that the Revolutionary experience meant something quite

different in, say, the Vaucluse, the Vendée and the Vosges.

In their present underdeveloped state, regional histories are notoriously difficult to synthesize, with the result that Sutherland frequently has to rely on sporadic evidence of isolated events. He presents even so an excellent survey of the resistance to dechristianization and the disenchantment of people confronted by increased taxation, conscription and unemployment.

Often, though, one suspects that regional evidence has been marshalled in support of a rather tenuous claim that "the history of the entire period can be understood as the struggle against a counter-revolution that was not so much aristocratic as massive, extensive, durable and popular." This not only lumps together a variety of heterogeneous protest movements; it also obscures the impact of mass movements in urban and rural localities in favour of radical change. Exactly what kind of change was demanded varied of course from one community or interest group to another. But the impression given here of a metropolitan revolutionary government defining its policies principally in order to control provincial reaction is simply misleading. The revolutionary assemblies were themselves representatives of a provincial elite. They, rather than some ill-defined Parisian intelligentsia, argued for a uniform legal and fiscal system, for political and economic reforms that would serve their provincial interests.

The most controversial aspect of Sutherland's book is his rejection of what he calls the classical theory which equates the history of the French Revolution with that of the consolidation of the bourgeoisie. Although he

traces this theory back to writers as diverse as Barnave, Tocqueville and Aulard, he is clearly taking issue with Georges Lefebvre and with the Marxist interpretations of Albert Soboul. Sutherland is probably correct in suggesting that the immediate causes of the Revolution were political rather than economic and that they involved a dispute about the kind of constitution (feudal or liberal) which would best check the absolutist tendencies of the monarchy. He also demonstrates that the aristocracy did not do nearly so badly out of the Revolution as is habitually claimed - many in fact benefited from the transfer of titles from the church to the landlord - and that otherwise the chief beneficiaries were not so much industrialists as wealthy peasants and the professional classes, especially those who had the sense to invest in property. But isn't this a major shift in political and economic relations, with the one facilitating the other?

What may have layed Sutherland here is Soboul's insistence that the Revolution marked the advent of bourgeois capitalism society. Between 1789 and 1815 France was indeed still a land-based economy; foodstuffs and raw materials remained the major source of wealth. The struggle proved, ultimately, to be less about principles than about the control of this wealth, its circulation and redistribution. What, otherwise, would have been the point of it all? Even if, during the Empire, a provisional class alliance was forged, it was on very different terms from those proposed in 1789. The upper echelons of the Third Estate could now call the shots.

Norman King

Three-dimensional Prince

The Jacobites. By Frank McLynn. Routledge and Kegan Paul £15.95. 0 7102 0165 6.

It was never enough to take the portraits and folk-tales of the Bonnie Prince to fact. But neither was it to go to the other extreme and paint him as a vile bungler. More than almost anyone else in history, the Jacobites - and in particular Charles Edward Stuart - have been the victims of their own mythology and its debunking.

It was always patronizing in the extreme to believe that good men and women should have followed either a will-o'-the-wisp or a drunken slob. Frank McLynn's achievement in *The Jacobites* (his third and most general book on the subject) is to give Charles Edward a solidity and three-dimensional reality that he usually lacks. Though there were fascos throughout its history, Jacobitism came far closer to carrying the day than it usually thought and those fascos (like the aborted rising of 1708 and the brief scuffle of 1719) were down more to the cowardice and compromise of others,

the whims of weather and of 18th century communications than to any intrinsic flaw in the Jacobite dynasty or ideology.

McLynn is in many respects a better narrative than analytic historian. His account of the risings themselves is exemplary and he offers the best case yet for the nearest to success of the '45. What is usually seen as the last shiver of an anachronistic and romantic throwback emerges as a genuine alternative to Whiggery and the Act of Settlement.

Even so, the book remains a rag-bag. Beyond a commitment to the indefensible - divine - right of kings and an unmarked connection with "Country" politics, it remains unclear what Jacobitism entailed. The account of the clans is useful but perhaps (perhaps in response to Bruce Leman's rather grumpy approach) and the unfolding of the spy network of the time will henceforward be of central importance to an understanding of the Jacobites' plight.

Even so, it seems odd to find a respectable historian making analogies such as "if 1715 was the Jacobites'

Battle of Midway when, like the Japanese in 1942, they held all the military cards, 1745 was their Leyte Gulf". McLynn's attempt to elevate the Jacobite women sadly looks like a trendy sop; no one has ever doubted the political influence of women at court; to make this a special characteristic of Jacobitism seems absurd (and somewhat ironic given Charles Edward's later misbehaviour, his father's misogynist world-views, and his younger brother's "Cardinal King's" apparent homosexuality).

History has never been able to cope with the fact that Charles Edward lived for 43 years after the failure of the Rising. But the indignities of his last years can't be allowed to cloud the facts. Had he pressed on from Derby, had he been encouraged to by his lieutenants - then the whole history of the kingdoms would have taken a backward turn, and not necessarily a bad one. As Chateaubriand said, the Stuart only lacked one thing, ironically they lacked the agency on which they based their claims: *la main de Dieu*.

Brian Morton

Lousy but loyal

The Worst of Times. By Nigel Gray. Wildwood House £11.95. 7045 0513 4.

Nigel Gray's strong hostility to the present Tory Government, and his grim forecast for its social effects, is the starting-point for a absorbing portrait of social conditions during the Depression of the late Twenties and Thirties; his case gains in force by not tracing the historical parallels too far.

The Worst of Times is based on a series of interviews with men and women from varied areas of Britain reported some 10 years ago, but still possessed of an immediacy today when unemployment is as great a problem as it was then. For unemployment, or the fear of it, dominated the lives of so many working people, while wages and conditions for those in work would never be tolerated now.

Countrywide, the most hated regulation was the Means Test, which was applied when workers sought help, when no more unemployment benefits

was available. Frying inspectors in firms and on belongings should be sold additional State aid could be granted to applicants. Gray wonders that children slept four or more in a bed. In summer Londoners slept on the pavement to avoid the bugs in their verminous houses, while the pavement shop became the poor man's bank, and lying "on the" a means of staying off the dreaded workhouse. Wives delicately stretching slender resources, and often being beaten for their pains. There are vivid accounts of fights with police, of demonstrations, of anti-Fascist riots in the Mosley period, yet without there was great community spirit, typified by the "Lousy but loyal" greengrocer in the Mile End Road at the time of the 1935 Silver Jubilee. Surprisingly, only a minority of those interviewed expressed any envy of the "upper classes".

to quote a Leicestershire man, "your misfortune that you were born to be poor".

Those lucky enough to be in work, in Bedwars colliery for example, found safety regulations flouted, gas hazards, dust causing ailments, and temperatures topping 100°F. Again, in a Rochdale mill, spinners worked in heat, damp and deafening noise for 12 shillings per week, and in a Lancashire floor-covering factory "fumes" were overpowering, yet there was no complaint, for to cross the all-powerful foreman or to grudge meant speedy dismissal. Spinners, agricultural workers, and even those on conditions for the tied cottage "was the biggest trap ever made". Reaction is to be found in important materials for social historians: salutory reminders for those who lived comfortably before the war, and encouragement to the young to count their blessings.

Eric Cluett



Churchill trying out a Tommy-gun with US troops. From Philip Ziegler's new social history of the last 60 years: *Elizabeth's Britain 1926 to 1986*, a superbly illustrated portrayal of the monarch and her realm (Country Life £14.95)

At risk

In Care: A Study of Social Work Decision Making. By Jeni Vernon and David Frain. National Children's Bureau. £8.60. 902817 25 6.

This important piece of research, commissioned by the DHSS and carried out by the National Children's Bureau, addresses the question of why an increasing number of children are remaining in care for long periods. Its answers will make worrying reading for all those with responsibility for such children.

From their study of 185 children in care to 11 local authorities, Vernon and Frain find that a major obstacle hindering discharge from care is "the lack of purposeful activity" to this end on the part of social workers. Categorizing types of admission, they find this to be a particular feature of cases where children have been taken into care on grounds of being "at risk". Paradoxically, this indecisiveness is despite the social workers' language of "planning for discharge", their power in the decision-making process and their general reluctance to receive into care in the first place.

The findings reveal that the outward appearance of planning - case conferences, reviews, etc - too often disguise a paralysis of action regarding children's futures. Indeed, when children are returned home this is usually the result of positive action taken by parents, rather than the successful conclusion to a social work plan. There is much to be learnt from this valuable study, particularly its findings, according to the authors, will shortly be confirmed by others, will search. It would be interesting, now, to investigate why social workers behave as they do. Vernon and Frain's findings point to inter alia lack of (great) knowledge of responsibility by social workers. If this were established it would confirm a complaint often heard from social workers.

David Dale

Reflect

Reflection: Turning Experience Into Learning. Edited by David Bond, Rosemary Keogh and David Walker. Kogan Page £13.95. 0 85038 864 3.

Reflection: Turning Experience Into Learning addresses a highly topical subject. Those concerned with adults as learners are turning to reflection on experience as a methodology, whether for updating and re-training, or for access to award-bearing courses, or as a context for education and career advising and counselling. Unfortunately, this book does not fulfil its promise for most readers in Great Britain. This is partly because it is a "diverse" collection of essays, as the three editors put it, with 11 chapters contributed by 14 people, from 13 institutions in three different countries, making for a planning nightmare. But it is also because, while each chapter is about reflection, they remain separate rather than forming a coherent whole.

The editors make clear that turning experience into learning is hard intellectual work. And to some extent their book demonstrates the point. They make important points about reflection as a methodology if it is to be successful. It needs to be learner-centred. It has to be intentional. It is complex. Since the cognitive and effective are entwined.

Various authors claim successful work with members of professions as well as students, but it is difficult to pin down exactly why. As Alex Main says in his chapter, *Reflection and the Development of Learning Skills*, "everyone will have something they can safely and satisfyingly reflect about and you (the tutor) need to keep helping until you both (student and tutor) find it." That is all I can say, however, at this point in my experience. What Alex Main and others demonstrate is that it is only reflective teachers who can be effective in helping students turn experience into

Norman Evans

Decisions, decisions

By Richard Evans



The World of Work: Marshway Limited. By Pauline Parlane. McGraw-Hill: Students' Book £4.95. 0 07 084853 X. People and Communication: Marshway Limited. By John Gardner. McGraw-Hill: Students' Book £6.50. 0 07 084879 3. Lecturer's Resource Manual £12.95. 084880 7. Survival Pack: The Bank Book 0 946685 09 6. Interview 0 946685 12 6. Workshop for Words 0 946685 08 8. Jonquil Publishing. Exercises in Personal and Career Development (fourth edition). By Barrie Hopson and Patricia Hough. CRAC/Hobsons £8.95. 0 86021 750 7.

The World of Work: Marshway Limited is intended to provide an overall picture of the business world for BTCEC General students following the World of Work module. It is also applicable to any student taking a course with a view to a career in business.

The book is centred on Marshway Limited, a fictional company. The founder, a Mr Marshall, starts his business life as a sole trader, expanding to become a partnership and finally a private limited company. Through the eyes of a commercial apprentice, students are taken through different departments, performing a variety of realistic tasks as they progress through the book. The 17 chapters include the history of the growth of a business in the private sector, the function of different departments in a firm such as the mailroom, sales and purchase, the receptionist and the accounts department, and micro technology and its introduction into the office environment. Each chapter has clearly defined objectives which enable the student to have an obvious reference point as to the purpose of the tasks.

People and Communication: Marshway Limited is integrated with the narrative of *World of Work*. The four chapters cover every aspect of business communications: letter writing and form filling; internal communications;

note-taking and how to prepare for a meeting. Chapter three analyses the style, content and intention of business communication, such as information selling, editing, rewriting and note-making, and the final chapter develops skills like briefing for a report. The book is thorough and does not ignore necessary questions of grammar such as sentence construction, grammatical terms and spelling.

The Survival Pack is the series of life-skills titles suitable for any secondary age and ability group. However, individual titles can be used for single subject lessons, so the series could meet both the specific demands of a life-skills course as well as contribute to cross-curricular life-skills teaching through traditional subject departments. Each title is a 28-page spiral-bound photocopy master. *The Bank Book* covers the services offered by a bank and helps students understand banking procedure. *Interview* covers all the ways of applying for jobs and preparing for an interview, a lively improvement on some other books and pamphlets in this field. *Workshop for Words* "encourages young people to approach writing as a craft which can be learned". The tasks aim to allow students to present their work to a wider audience than just the tutor, and to work together as well as independently.

Exercises in Personal and Career Development is aimed at those teachers and specialists concerned with how young people meet the "phenomena of change and transition". First published in 1973, the book has useful exercises on choice, roles and out-of-school activities which will enhance the decision-making skills of young people.

Careers Education and Guidance. By Bill Rogers. CRAC/Hobsons £8.50 plus £1.70 p&h. 0 86021 617 9. Decisions at 15/16+. By Michael Smith. CRAC/Hobsons £2.20. 0 86021 627 6. Action on Unemployment. Church Action with the Unemployed, 146 Queen Victoria Street, London EC4V 4BY. £2.95. 0 86082 470 5.

Careers Education and Guidance is a handbook and guide to careers education, guidance and training for newly-appointed careers teachers and those responsible for such courses. The book is in five parts covering the aims and definitions of careers education, its place in the curriculum, the role of the careers teacher and advice on designing a careers education programme. Although the book seems over-priced for a 160-page paperback, it is full of useful information including, for example, how to set up a careers library and ways of interviewing and counselling students. Many teachers will find the section on "Careers Infusion" helpful, as it is important to involve as many different subject specialists and departments as possible so that careers education is not seen as isolated from the rest of the curriculum.

Michael Smith's *Decisions at 15/16+*, now revised and rewritten, will be familiar to many involved in careers

education. This is a must for any careers room; have found that students will refer to it again and again. It has a clearly stated, lots of cartoons and diagrams and a detailed job-reference grid. There are also familiar tips on study skills such as planning revision and getting outside commitments sorted out before the exam countdown.

Action on Unemployment is a handbook listing 100 projects set up for the unemployed in the United Kingdom. Church Action with the Unemployed is an ecumenical charity founded in 1981. The projects are listed in alphabetical order by county and each has a detailed description. In Gloucestershire, for example, a scheme aims to fill the gaps between the YTS and TOPS. In Coventry, the cathedral is used as a resource for slow learners providing training for four people.

Practical Approaches to Careers Education (fourth edition). By Catherine Aven. CRAC £8.95. 0 86021 763.

Successfully Ever After. By Shirley Sloan Pader with Penny Kane. Plunkett £7.95. 0 86188 330 6. A Positive Future: A Careers Guide For Parents. By John Morrison. Hutchinson £4.95. 0 09 161391 4. *Careers in Fact and Fiction*. By J K and R B Belstock. American Library Association/Eurospan £18.95. 0 8389 0424 6.

"Practical in intent and pragmatic in approach." That is how Catherine Aven, recently retired ILEA Senior Inspector for Careers and doyen of the careers education world, describes the fourth edition of her important and influential book. First published in 1974, the book still retains its enthu-

slam and pioneering zeal for careers education and guidance as well as its practical use for school practitioners. It is not only a statement as to the importance of careers education as a preparation for adult life but also an invaluable guide and handbook for headteachers, heads of careers departments and careers teachers.

Successfully Ever After, although targeted for the needs of women already at work, could be used by sixth formers and college students in working out how to succeed after obtaining a job. The authors, a journalist and a careers expert, cover a range of questions from how to deal with criticism and praise at work, to salaries, fringe benefits, and the dos and don'ts for succeeding after a promotion. This is a lively, simple and well-written book. It takes the same approach as the assertiveness-training that many women follow to help them handle pig-headed male prejudice.

A Positive Future aims to assist parents in advising their children on a choice of career. The book is full of information on every aspect of parental roles, education and training, jobs, and option choices at 13, 16 and 18. It is not particularly easy to use: the layout is complicated and the language dull. The book is also based on the arguable premise that youth employment prospects will substantially improve over the next 10 years.

Careers in Fact and Fiction is a fascinating book aimed at the US market but of value to careers guidance teachers in Britain. Taking over 160 career fields as wide-ranging as Accountant, Astronaut, Homemaker and Health Worker, and using over 1,000 books, the authors cite relevant works for each occupation. So if someone was considering working in a museum, they would find on page 72 a reference to *The Man from Greek and Roman* by James Goldman, a novel about an American curator who investigates the theft of a rare Roman chalice by travelling to Europe. It's an interesting idea, but I hope that at £18.95 the distributors give substantial discounts.

ground information has been given with the tasks in order to provide a framework for understanding, so that the tasks can be as meaningful as possible. Students may have some difficulty reading the manuscripts, and there is no key. The book would be suitable for intermediate students preparing for advanced examinations and employment, as well as those requiring specialist training in technical keyboarding.

Progressive Tabulation Work. By Jennifer Iles. Pitman £2.95. 273 02350 0.

For those who have already acquired keyboarding skill and wish to improve their tabulation work, this book gives ample scope for practising both the blocked and centred styles. There are 15 sections with detailed instructions and exercises, from the basic rules to the most complex tabular work likely to be encountered in examination and employment.

Margaret J Harrison

CHILDREN'S LITERATURE

Board books, cloth books, pneumatic books for the bath - ingenuity knows no bounds when there's a brand new readership at stake, and baby books have been one of the big publishing successes of the last decade. While the West Coast superbaby ("taught her to read at six months") may not have found favour over here, it now seems popularly accepted that the book habit is a Good Thing and best started young.

Illustrated alphabets had been around for some time before Helen Oxenbury's *Baby Board Books* took the market by storm five years ago. The bitty pink infant with the pink pick features showy engaging in various babyish pranks - being a tray with a spoon or pulling off his socks - has since won his way into the hearts, or at least the homes, of more than three million young readers.

The latest offering from the same publisher, Walker Books, seems unlikely to appeal on the same scale, though the series *Look at me* (four at £1.95 each) does have many admirable features. Beautifully produced in lovely glossy colours on thick board, Jan Pienkowski's arty cut-out pictures are just too abstract. I puzzled over some pages for several minutes before comprehension dawned, and my junior researcher, one-year-old Lettie, barely gave the books a second look. When you've never seen a real frog, a highly stylized one who catches ladybirds on a long pink tongue is not going to mean much, nor is the mouse, seen from above and defying gravity, running down the pop-art curtains.

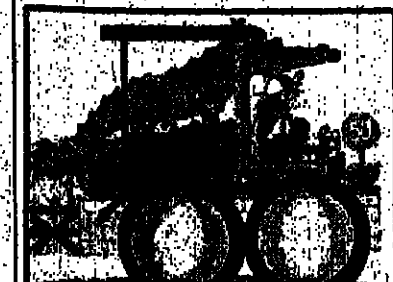
The overall design of the Pienkowski series is first class however, each book having five chunky leaves cut in the shape of the animal described. Thus "Look at me... I'm cat" can be grasped by its pointed ears and "frog" by his bulgy eyeballs at the top of each page. New pages which stick or edges which resist turning little hands can be a major stumbling block when the reader's attention span is a few minutes at most.

Colin Hawkins' animal series (Methuen, £1.25) fulfils all the requirements of easy handling and simplicity. But perhaps his delicately coloured cartoons (of pets, zoo animals, farm animals, park animals, with a single word caption to each double page) will appeal more to their cheeky humanoid way to adults who buy the books than to the recipients.

Many candid parents will confirm that their child's first favourite reading is the mail order catalogue. Mother-care is nearly always top of the pops, with its lifelike images, familiar domestic situations, and lots of little people in high-chairs and rompers, because when all's said and done, babies like looking at babies best of all. Children's photographer Camilla Jessel has cashed in cleverly on this observation with her two *Babydays* books. *Baby's Bedtime and Baby's Clothes* (Methuen, £1.95). These were Lettie's favourites of the batch. One photo in particular, of a West Indian baby cleaning his teeth, prompted laughter every time. There are also beautifully caught snaps of babies of every race and age having a bath, peeping through the opening of a vest, pressing a nose against the mirror, and finally, zonked on the pillow.

Bedtime is the theme of Susanna Grets's exquisitely drawn *Teddybear* book (A & C Black, £1.50) which walked away with last year's Smartie award. All four books (Hidde and Seek, I'm not Sleepy, Ready for Bed and Too Dark!) take the form of an amusing sequence ending in one or all of the colourful bear characters (with names like John and Andrew) comfortably snuggled up in bed. With their short, neatly scanning texts, these books make perfect material for an evening session of parent and toddler reading together - as well as a useful lure for reluctant sleepers.

Jenny Gilbert



Left: an illustration from *Littie Wheels*, a short story and play. Center: a book from Methuen. Also: an illustration from *Baby Birds* (£1.95 each).

COMMERCE

Technical Typing Tasks. By U. A. M. Carnegie. Macmillan £5.95. 0 333 366721.

First published in 1983, the aim of this book is to provide students and teachers with a variety of technical material for keyboarding, whether on typewriter or word processor, and produce facts and figures clearly and simply so that they are easily understood by the reader. The emphasis is on proof-reading and good presentation.

Much of the material has an Australian flavour, because the author now works there. There are 50 tasks and these include lists of international symbols in four languages. Some back-

ground information has been given with the tasks in order to provide a framework for understanding, so that the tasks can be as meaningful as possible. Students may have some difficulty reading the manuscripts, and there is no key. The book would be suitable for intermediate students preparing for advanced examinations and employment, as well as those requiring specialist training in technical keyboarding.

Typing Skills Book II. By Thelma J. Foster. Stanley Thomas £4.95. 85950 160 4

Attractively printed with the use of red breaking up the monotony of black and white, this book revises the theory in *Typing Skills Book I*, and covers the remainder of the CSE work, plus that required for RSA Stage II, and LCCI Intermediate Typing.

Eight sections covering over 80 exercises and 30 progress tests arranged at intervals give a very comprehensive coverage of the theory and practice required to attain the in-

termediate level of typewriting.

Many exercises are relevant and interestingly linked with office practice and, as in Book I, there are exercises correlating the use of English with typing. Full punctuation is introduced from the beginning, in addition to "open" punctuation, so that students become familiar with each style and have no difficulty adapting to that favoured by a future employer. A list of commonly misspelt words has been included for practice purposes.

Margaret J Harrison

New Careers Books

A Career in Computers

Paul Greer
For those who are fascinated with computers and are thinking of a career in the industry, the author, in an interesting, easy-to-read and jargon-free text, looks at computers and the part they play in the world today; he explains the basic structure of the computer industry and the variety of jobs within it and discusses the ways of obtaining work with computers and the personal qualities and qualifications necessary.
0 7134 5143 2 184pp 78 illus March 216 x 138mm Hardback £6.95

Floristry Handbook

Rona Coleman
Floristry involves the preparation and presentation of cut flowers and foliage ready to sell in the flower shop. This is a complete reference to professional floristry techniques including an understanding of retailing and management.
0 7134 5143 2 184pp 78 illus March 216 x 138mm Hardback £6.95

Manicure and Pedicure Handbook

Joy Morris
Whether as a student or practitioner it is important to keep up to date with new materials, equipment and techniques. The author includes not only the necessary basic information but also the latest forms of treatment using new technology. The book covers the syllabus for the City and Guilds Certificate 62-1, and the manicure and pedicure certificate syllabus of both the International Health and Beauty Council and the Confederation of Beauty Therapy and Cosmetology.
0 7134 4717 6 128pp 43 illus March 216 x 138mm Hardback £6.95

Working in the World of Sport

Hila Banks & Mike Yezley
The world of sport offers many exciting opportunities to young people. This straightforward and interesting text describes the professional in individual and team sports, and covers a wide range of jobs connected with sport in general. Details of qualifications and personal qualities required are given together with sound advice on how to find the particular job you want.
0 7134 1191 0 128pp 10 illus January 216 x 138mm Hardback £6.95

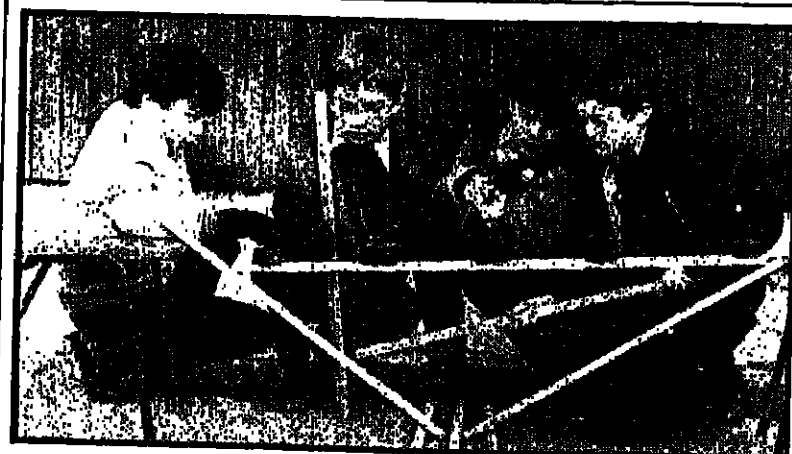
Becoming a Nursery Nurse

Margaret Culham
If you are given the responsibility for the care of young children it is of the utmost importance that you have correct and adequate training. In a very readable text, with clear and interesting photographs, the author describes the practical work nursery nurses will experience during training and the subjects they will be studying.
0 7134 4830 X 64pp 25 illus April 220 x 190mm Hardback £5.95

Becoming a Hairdresser

Pauline Whalley
To become a qualified hairdresser it is necessary to ensure that you choose the best possible training available to meet your particular needs. The author tells you what to expect from the day you begin your training to the day you receive your hairdressing certificate, whether you train as an apprentice, take a full-time course at a college of further education, or study at a private school.
0 7134 5080 0 64pp 25 illus April 220 x 190mm Hardback £5.95

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Builders' mates

Mary Cruickshank discovers what children can do with real materials

The lack of three-dimensional work in primary schools is something that art advisers and inspectors have been pointing out for years. Where primary schools do offer opportunities, they often tend to be limited to sand-trays and plastic blocks, or lightweight materials such as cardboard and cartons.

The Builders Project - a loan scheme of "real" materials - was devised by Peter Dixon and Tony Garrett of King Alfred's College art department in Winchester to make up for this deficiency. As a result, a number of Hampshire schools have had their resources for three-dimensional work extended in an exciting way.

"Small children live in a totally three-dimensional world. When they start school they need to have the range of materials they work with widened, not narrowed," according to Tony Garrett, head of art.

A DES grant was used to build a small store and to purchase a variety of materials. These include white builders' bricks, planned wooden sticks and blocks of varying sizes, buckets of assorted stones, pebbles and gravel, polythene sheeting, assorted ropes and plastic pipes and tubing. They are stored in milk-crate sized boxes and borrowed by local schools for half-term periods.

After successfully experimenting with its own students, King Alfred's made the stock available to local schools. So overwhelming was the response that the department found itself temporarily depleted of supplies for its own work.

In fact the materials have proved challenging and stimulating when used with all age and ability groups. One of the most successful projects was with a group of 11-16 year olds from a special school in Basingstoke. College students work in complex forms and symmetry, while young children explore different shapes and textures. Fabulous fantasy worlds of water gardens and islands can be created in huge, shallow ponds constructed with bricks and polythene sheeting. As well as extending manipulative skills, the

materials offer the technical and intellectual challenges of constructing bridges and towers of whatever size may capture the imagination.

Lockerley Primary School, a small village school about five miles from Romsey, has borrowed six crates worth of materials - bricks, long sticks, wooden blocks, plastic tubing and stones and pebbles. Rachel Rowland, who teaches at the school, is also a part-time art diploma student at King Alfred's. She is enthusiastic about the ways in which the materials have developed the children's powers of observation and encouraged them to look at things from different angles.

When I visited the school a couple of weeks ago a class of mixed ages were eagerly at work. A Stonehenge-like structure built from wooden blocks occupied part of the classroom floor. A child carefully placed the final archway across the final archway and concentrating hard, eased himself through into the enclosure. In another corner a decorative mosaic of different sized stones and pebbles depicted the simple figure of a girl, while another group had transformed the plastic tubes and piping into a "housework robot".

Out in the playground the white bricks formed the interlocking network of a maze. The group who had made it were measuring the time it took to reach the centre, both with and without a blindfold. Another group worked on constructing a bridge designed to carry a load of at least four kilograms - the width of the bridge, suspended between two chairs, had to be longer than the longest stick. Some of these problem-solving tasks had been presented by the teacher, others had been devised by the children themselves.

The work leads naturally into many other areas of the curriculum and one of its great strengths, according to the head, Greg McCann, is the way in which it integrates different subject areas. He also values its contribution towards the social development of the children, who learn to cooperate and respond to each other's ideas. "It's not only good for the individual child, extending him and helping him de-

Discovering through clay

Suzanne Hewitt talks to potters and joins a pottery class

"Pottery is an articulation in three dimensions," says Gavin Dunbar, a working potter and head of ceramics at a Hertfordshire comprehensive.

To start with, he says, it is important to understand the material, to feel the reactions of the clay; how it moves and resists, how it can stick to your hands and dry out if it is handled too much. His present first years are making a ceramic plaque of their house. They have to learn to roll the clay evenly, how to sculpt it, carve into it and join on to it with slip. All the time Gavin talks to them about their work and about the clay - its tactile qualities, how it is cold and slippery, its limitations and possibilities. To inspire he often uses his collection of natural objects like skulls, crystals and driftwood. The second years are making frogs from two joined thumb-pots, and he is explaining to them the use of oxides and glazes.

I asked him if he had had many disasters, for instance in the firing. He said no, quite the reverse. He does a lot of his own work alongside his pupils, including making some very fine bone china. "It's important to inspire confidence and to get them doing something relevant," he says. "Ashtreys for coffee tables are strictly not on!"

Gavin's enthusiasm is infectious. His room is always open to his sixth formers, who are currently working on the theme of exhaustion, with group sculptures of the human form. At this level, he says, students need to work with a real artist. He maintains close contact with the Whitechapel Art Gallery, and he took his sixth formers there to work with the well-known ceramics artist, Jacqueline Ponselle, during her recent exhibition.

Many art teachers opt out of clay, says Gavin, because it is difficult to store and hard to organize; but it provides a "hands on" experience that adds immeasurably to children's growth and development. One area where clay is essential, he says, is Special Education. He taught for two years in a Rudolf Steiner school for blind and handicapped children, where clay played a vital role in their therapy. "Institutions without clay are really depriving people."

Mark Williams holds a responsibility post for creative work, including art, craft and display, at Sheringham Junior School in East London. He introduces his seven-year-olds to the three basic



techniques of slab, pinch-pot and coil in that order. "Children should develop all these skills in the first two years of the junior school," he says, "so that by the third year they can choose whichever ones fit in with their individual schemes of work."

His present third years are working on a "design exercise in awareness". First they sketch and model from the real world, in this case the school buildings. Then they design and model a part of the school in an imaginative way, experimenting with form, pattern, texture, and line, with the clay. They are drawing in 3D. "Pottery plays a vital role in children's all-round development," says Mark, "because they enjoy it and it helps their understanding in all other areas of learning."

He is at present working on a Diploma Course in Curriculum Studies with the art adviser for Newham, and with Maurice Barrett, the art adviser for the London borough of Redbridge. Maurice Barrett maintains there is a mystique about clay which puts teachers off, but they can learn from the material, alongside their pupils.

Karen Robson is doing just that at Larkwood Junior School in Chingford. On my visit I was met by the headmaster, Mr Webb, who took me through the school to the old laundry room, now imaginatively converted into a multipurpose art room, complete with kiln and pugging machine. Here Karen was working with a group of art club enthusiasts on a 3D model of their house. Having made their slabs for the base, the children were trying out textures for bricks and pebbledash, and discussing strategies for joining on bay windows.

Claire was closely following her graph-paper sketch to check the proportions, while Ben was totally engrossed in bashing the air-bubbles out of his slab. "You can make anything out of clay," he murmured. "Well, perhaps not the sky," Petra reckoned the best thing about clay was "if you do it wrong you can start again."

Karen Robson thinks these statements are very relevant. Children unsuccessful at more formal subjects can succeed in clay. "It gives them tremendous confidence," she said, showing me an impressive collection of ceramic fish with bobbles and hedgehog spikes, made by a mixed-ability first year class.

As art and craft work one afternoon with different groups and their class teachers. She likes to link her work with whatever topics the children are doing, and she sees clay as bridging many areas of the curriculum. Bobby Child introduced pottery this term to her class of eight to ten-year-olds at Greenleaf Primary School in north-east London. Her headteacher, Mrs Hollist, arranges for all pupils to visit the local field study centre in Epping Forest, a facility available to all pupils in the borough of Waltham Forest. Bobby took her class there to study the Iron Age fort on Boadicea's Britain.

"Ten-year-old Sam wrote later: 'We went to a hill-fort in Loughton. It was about 2,500 years old... it had deteriorated through the years. I expected it to have huts up there and bodies.' The children collected not only mud from their boots, but also clay from tree roots, to make into pots and shelters for their model hill-fort at school."

They were surprised to learn that Iron Age people did actually throw pots, and were eager to try for themselves. John Porrett, a well-known local potter, came into school to demonstrate throwing, and all the class had a turn at the wheel producing several credible pots. Bobby said "He added an enormous amount to the project and the children learned a great deal from him. Now they can't wait to do more."

This enthusiasm from both teachers and children seems to speak for itself. Clay can be used as an exciting and successful medium for personal discovery and expression, and for direct learning through a three-dimensional experience. It is also tremendous fun.

A thing of beauty...

Joe Reid on the contribution of City and Guilds

The Great Exhibition of 1851 made a profit and no wonder. It celebrated all the things Victorians were proud of: the clutter of the Empire, the achievements of industry and the railways, the remarkable feats of engineering by Brunel and Joseph Paxton himself who created the Crystal Palace. It was a vast display of energy, skill and treasures from every culture in the world. It was also (at Prince Albert's insistence) a showcase for British industries, arts and crafts. What has happened since? Has the heritage of skill disappeared?

It hasn't. The culture continues, and one primary agent of continuity in crafts in Britain is the City and Guilds of London Institute. The Institute has been nourishing the crafts of Britain since 1878, and its certificates are known worldwide. To have your City and Guilds is to be a skilled worker anywhere. Last year there were 352,000 entries for City and Guilds craft examinations. You can sit your City and Guilds in 600 subjects including information technology, forestry, enamelling, circuit engineering. Taking away City and Guilds from the training scene would be like taking a main plug out of a socket.

No one in the City and Guilds today would thank you for promoting the idea that it is an arts and crafts organization. The Institute sustains a prodigious range of technical training in every aspect of engineering, agriculture, printing, the metal industries, textiles and computer sciences. Nevertheless, the City and Guilds craft certificates are still the major symbols of quality control in our traditional

crafts. The heartening thing about the craft picture today is that there are as many candidates entering for the City and Guilds as there were 20 years ago, when we never had it so good. The most exquisite object I saw this year at City and Guilds was a piece of enamelling done by a mature student. It was so perfect that the chief examiner could find no fault in the work and awarded it 100 per cent. This year there was also a spectacular display of silversmithing despite the fact that silversmithing for ordinary household objects has not been in general use since 1945.

One result of the age of communication is that the skills of the real world are celebrated too little. The flood of journalistic hype around computers has led to less appreciation for the ability to make useful, beautiful things out of the gifts of nature. The skills nourished and examined by the City and Guilds are ones we should be proud of and proud of encouraging in the young. Craft is not dead, nor is it confined to Cotswold cottages. Art is alive and kicking in Birmingham Polytechnic, in Bradford and Holey Community College, in the Jack Kramer College in Leeds, and other historic towns where the traditions of craft are still highly esteemed.

When you read the next article about another electronic whizz kid who zoomed into millions and is now disappearing like the Comet, think about the practical crafts of Britain that underlie the fabric of everyday life and which still generate a significant part of our wealth.

The hi-jacking of design

Art should not be divided from craft and design, says John Steers



substitute which can instil the same skill, and understanding of materials. The introduction into colleges of art and design, and into schools, of working in actual materials of crafts, rather than merely drawing and theorizing, initiated a great rise in the standard of design education, and of industrial design itself, from the 1930s onwards.

Quite apart from the role which crafts can fulfil in the education of the future designer and the public, the artist/craftsman still has a vital role, if not more vital than ever before. It is essential in days of unemployment and the "new enforced leisure situation"

that individual craftsmen and their small businesses continue to flourish. The recent crafts revival, which the Crafts' Council has done so much to encourage, is very welcome and more should be done within art and design education to provide for the crafts.

Fortunately there is still a majority of teachers at secondary level who were trained as artist/craftsmen/designers, and who do not think their subject area should be dominated by the technological attitude to design. Art and design education is a cognitive area in which many visual concepts and useful skills can be learnt. Perhaps

there has been an over-emphasis on "expression" which may have pleased some educationists, psychologists and fine artists, but which has resulted in the public not regarding art and design as a serious cognitive subject in the curriculum.

There can be no room for pessimism. Britain has probably as good a provision for art and design education as any nation. There is no question of criticizing design and technical departments wholesale for their theories of design education, but attacks should be made on design courses which claim to produce "real" designers when they cannot, where, for example, those who have taken the courses cannot actually produce fine designs in various media. It is recognized that the first aim of a course may not be to produce designers. The principal aims may be to develop the design ability which everyone has, but, nevertheless, one of the sure tests of this development must be that it is manifested in the quality of the work produced.

The exclusion of the word "art" from design policy documents has regrettably become common. When defining areas of design which are heavily dependent on art, such as fashion, textiles, graphic design, theatre, film and television, ceramics, etc., design educators often refer to "flair" or "invention" rather than "artistic" or "creative". When artistic judgements are necessary, it is those based on education in art, they refer to "intuitive" judgements or behaviour.

These verbal attempts to completely isolate "design" from art are crude, simplistic and deceptive and should be challenged by art educators. On the other side of today's art and design coin, there is a minority of teachers who encourage the narrow divisive view that art is an elitist, obscure subject, entirely centred upon self and free-expression, devoid of discipline or cognitive studies.

The attempts to divide art from design cannot be justified on educational grounds. As in the case of the NAB, policy proposals advocating such a split stem solely from unproven economic and political arguments. A much broader approach embracing many aspects of art, craft and design is necessary to retain and increase the importance of, and respect for, the subject area in general education.

John Steers is the general secretary of the National Society for Education in Art and Design.

Which course?

Guide to Courses and Careers in Art, Craft and Design. By Tony Charlton. NSEAD. £4.95. 0 9510873 0 4.

School leavers who are considering applying to art colleges will find this guide invaluable. CNA and BTEC courses have broadened the areas of possible study, thus complicating the original route of foundation course at an art school leading to Diploma or Degree studies. A guide is vital for both teachers and students if an appropriate choice is to be made.

Tony Charlton deals first with self-awareness, commitment and talent. Art students are required to read, research and work long hours on projects both in term and during the holidays, and young persons who are not prepared to work throughout the year should not consider such studies. On the other hand, if they have talent, energy, and commitment, they will enjoy developing their skills which should lead to a rewarding work life.

The author continues by describing the range of options which can be studied and specialized in. Choice of college grants both discretionary and mandatory, the filling-in of application forms, preparation of folders of work and the sensible selection of contents are clearly set out and lead on to helpful guidance in the area of work or further studies after graduation.

Case studies of 15 graduates show how a variety of ex-students have found satisfactory jobs to suit their talents and expertise, or have become self-employed artists, craftsmen, designers, or freelance workers.

Fine art and all the craft options are examined, as is their blurred relationship which has produced the artist/craftsman. Advice and information is given on setting up a workshop and the financial aid which the Crafts Council can offer.

The final chapter lists, with the aid of maps, the areas where local education authority foundation courses are available. Further maps show the location of BTEC General Art and Design National Diploma courses. Higher level studies are listed and the book closes with explanations of all acronyms and abbreviations, a bibliography and useful addresses.

This guide will be of great assistance to careers advisers in schools and colleges, art, craft, and design teachers, and students themselves. It is admirably clear and provides a wealth of much needed information.

Betty Tadman

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Primitive sense

Victoria Neumark visits 'The Human Touch', an exhibition at the British Museum

The Human Touch British Museum until March 16. Admission free. Accompanying programme of lectures, talks, films. Contact Education Service on 01-636 1555, ext 511 for details.

Keats, nearing his deathbed, spoke of losing "all that information, primitive sense, light and shade, the knowledge

of contrast necessary for poetry". That phrase never had so much meaning for me as walking around the British Museum's exhibition, *The Human Touch*. What an amazing force one primitive sense, touch, has for us human beings; so much so that as my hands caressed the smooth black basalt of a Hindu god/goddess pair or traced pictograms on a quartzite statue of an Egyptian official, I felt almost improper to experience such sensations in a public place.

Of course, the exhibition is also one of the shamefully few which visually handicapped people can enjoy. The 20 carvings, ranging from the second millennium BC to the 20th century, from New Zealand to Nigeria, in wood, jadeite, marble or granite, are well positioned with braille labels and a joining handrail. Headphones are available, and a large print book from the ladies at the door, who wipe your hands with tissues to protect the exhibits.

In choosing the holistic image of the human figure, rather than the fragmented one that an artist such as Judy Chicago opted for, the exhibition's content also is accessible. Whether they are coarsely sturdy Roman figures (the god Asclepius full of gravitas), a chubby Cupid or a stone head uncannily resembling Norman Tebbit, or the intricacies of Hindu, Assyrian or Persian draped statues, the pieces seem to come alive at the touch. And then such exotica as an early Mesopotamian female figurine, a Maori amulet or a Twi (Nigerian) wooden male nude surprise the palm as much as the eye. Perhaps the Egyptian objects are the greatest surprise. Headresses and hieroglyphs look so bizarre and remote, yet under the visitor's fingers they seem to glow as familiarly as a stone from the beach or a friend's hand.

Both visually-handicapped and able-bodied people going round the exhibition are quite rapt in sensation; and young children are thrilled to be able, at last, to touch.

Bio-degradable

John Tranter on kits for 'budding biotechnologists'

Microbial Activity Kit (M40472/6) £16.75
Replacement packs of media are available from Philip Harris Biological, Oldinxton, Weston-super-Mare, Avon BS24 9BJ.

Enzyme Demonstration Kit (ZPK-356-T) £20.48
Enzyme and Cell Immobilization Kit (ZBA-222-R) £24

Replacement items for both kits are available from Griffin and George, Gerrard Biological Centre, Worthing Road, East Preston, West Sussex BN16 1AS.

As the interest in biotechnological applications grows, supported by the demand in the National Criteria for a stronger emphasis on technology in Biology GCSE syllabuses, the list of biotechnology resources also increases.

An interesting newcomer from Philip Harris Biological is their *Microbial Activity Kit*. This is based on "Sig" tests (standing for "significance"), which are also being marketed in the industrial sector. The use of the Sig tests involves the incubation of samples from environmental sources in screw-capped tubes of various agar or gelatin media. If micro-organisms are able to digest the substrates are present, clear changes - in the colour of the agar or in the production of gas - are seen, which, depending on their magnitude, give a semi-quantitative measure of microbial activity. In this way industrialists can screen various liquors and process waters for microbes likely to cause spoilage, corrosion or health problems, and be able to assess the significance of any microbial activity they detect.

The educational version of these Sig tests takes a slightly different approach. "Three bacteria, thought to present minimal health risks given good practice, are provided for the tests. *Escherichia coli*, *Bacillus subtilis* and *Pseudomonas fluorescens* were chosen because of the range of conditions in which they thrive and the variety of degradation reactions that they carry out.

The *Microbial Activity Kit* consists of the three bacterial cultures already mentioned, plus four tubes each of six substrate media - glucose, lactose, gelatin, tributyrin, starch and nitrite. (A seventh, sulphide medium is also available but is not included in the kit). The procedure to follow is simple, involving the aseptic transfer of samples in sterile water of each bacterial culture to the various tubes. These are then released and incubated at 30°C (25°C for the gelatin) and observed over a number of days.

The speed with which changes occur is an indication of the degree of bacterial activity. The three bacteria gave variable results with the six substrates, reflecting their different physiological but all results were clear and obtained within two days. After use, the tubes are autoclaved before disposal.

This kit provides a safe, convenient method of studying bacterial activity with fewer attendant risks and trouble than would be encountered with the pouring and streaking of agar plates using Petri dishes. The instructions are clear and there is sufficient background information on the activity of the bacteria for teachers to know what to expect and be able to interpret the results. The notes, however, are surprisingly insufficient in the extent to which they discuss the industrial and economic applications of the kit.

The kit can be employed at a number of different levels by the enterprising teacher who could integrate its use into normal work on bacterial growth and enzyme production to add a further, technological dimension. Another valuable resource for the budding biotechnologist!

From Griffin and George comes their *Enzyme Demonstration Kit*. This is designed to show various industrial applications of enzyme technology and complements an American kit that Griffin already imports. This new kit provides materials for six groups of students to study six investigations (though standard laboratory items will also be needed). These involve the action of amylase, invertase, protease, cellulase and pectinase.

In fact, the first experiment with amylase has no industrial relevance and just studies the influence of pH and temperature on enzyme action. Maltin in germinating barley seedlings is then investigated using starch agar to detect amylase production - a fairly standard, familiar, but reliable test. Purified with a sweet tooth may be more attracted by the work on invertase, which considers how soft confectionery in chocolates are produced. Sugar lumps are used to reveal the changes that occur with invertase.

The breakdown of proteins is studied by assessing the speed with which gelatin is digested. The more usual technique of observing liquefaction of the gel is reversed here - protease and gelatin are incubated at 26°C and attempts are then made to solidify the gelatin by cooling with ice. On balance, I think the liquefaction method is more striking and convenient, particularly if the *Microbial Activity Kit* is utilized. Here, the biotechnological relevance arises from a comparison of a biological detergent, soap flakes and a protease in their proteolytic actions.

The biodegradation of cellulose in filter paper and carboxymethyl cellulose is studied by detecting the formation of reducing sugars with Benedict's reagent. This variation, involving the appearance of end products, is helpful to reinforce the observation that enzyme reactions can be monitored in two ways. Finally, apple sauce, which is reconstituted from dried flakes, is treated with a pectinase so that its structure breaks down to release more juice. This is collected and measured and shows how pectolytic enzymes are helpful in the commercial extraction of fruit juices.

All the tests were easy to carry out

and can be incorporated into a variety of work on enzyme action throughout the school, perhaps most readily as a circus. In this way, various influences on enzyme function could be studied by manipulating conditions and at the same time industrial applications demonstrated. Not all the ideas in the kit are particularly novel, but the package is a very convenient collection of materials.

The Griffin *Enzyme and Cell Immobilization Kit* takes the technological applications of enzyme use a stage further. There are two investigations on enzyme immobilization; the first uses invertase which is bound to "magnetic powder" to study the production of glucose from sucrose. Distinct strips detect the formation of glucose very conveniently. Having carried out the reaction, it should then be possible to recover the enzyme for reuse with fresh substrate. This is done with a magnet supplied in the kit by running it around the outside of the beaker to collect the particles of powder/enzyme. I found this technique totally ineffective, however, with the magnet provided.

The second technique of immobilization uses invertase enclosed in alginate pellets. The enzyme-encapsulated pellets are relatively easy to make and do show that the enzyme is reusable once the pellets are filtered off, washed clean and placed in fresh sucrose. Comparisons of invertase in its free and encapsulated state can also be carried out, showing that the reaction kinetics of the enzyme is affected by the immobilization.

Enzymes within whole cells can be investigated using techniques to entrap yeast cells in agar or alginate pellets. Fermentation of sugar is monitored by the production of carbon dioxide and various parameters can be altered to determine their effect. Again, transfer of the yeast/pellets to fresh substrate shows the continued viability of the cells.

The kit goes on to emphasize a number of important commercial aspects of immobilization. These involve studies of the influence of pellet size and strength on the ease with which solutions flow between the pellets, and how readily these might become compressed - both clearly vital considerations for an efficient continuous batch process. Also, the vital stain methylene blue is used to confirm the long-term viability of the yeast cells. The pellets are broken open by chemical action, and a haemocytometer (not supplied in the kit) used to count the number of viable cells.

The notes accompanying the kit are very full and informative and do provide a good insight into the commercial aspects of enzyme-mediated reactions. As with the other two kits, there should be a number of opportunities for the committed biologist to include the investigations presented here in the teaching of familiar topics and so provide a more relevant course. Altogether, a most useful package, but a much stronger magnet is needed!

notes

ATOMIC RESOURCES
A new edition of the booklet "Resources for Teachers" has been issued by the United Kingdom Atomic Energy

Authority. Materials described include a computer program which simulates the operation of a nuclear reactor, new videos for lower secondary school children, a multi-media resource pack, and a series of posters.
Information is also provided in the booklet on other audio-visual material and free publications obtainable from

the UKAEA.
The booklet is available free from Room 119, UK Atomic Energy Authority, 11 Charles II Street, London SW1Y 4QR.

CONSUMER FILE
Forbes Publication Ltd, publishers of "The Consumer File", have moved to 120 Bayswater Road, London W2 3JH.



Keeping mum

Victoria Neumark previews a new 'Scene' documentary on teenage pregnancies

SCHOOLS TELEVISION
Scene: Too Young to Have a Baby? BBC2, March 12 and 14.

Eighty thousand unmarried teenage girls got pregnant last year. If watching this programme can prevent even one likely candidate from "joining the club", then its making will have been worth while. Certainly none of the young mothers interviewed for *Scene's* documentary would recommend their own experiences.

Susan Tully (the single and pregnant Michelle Fowler of *EastEnders*) presents the material with fine ironic emphasis. Though some may find bizarre items of information like five-year-olds getting pregnant and 13-year-olds getting pregnant and 15-year-olds getting pregnant and 17-year-olds getting pregnant and 19-year-olds getting pregnant and 21-year-olds getting pregnant and 23-year-olds getting pregnant and 25-year-olds getting pregnant and 27-year-olds getting pregnant and 29-year-olds getting pregnant and 31-year-olds getting pregnant and 33-year-olds getting pregnant and 35-year-olds getting pregnant and 37-year-olds getting pregnant and 39-year-olds getting pregnant and 41-year-olds getting pregnant and 43-year-olds getting pregnant and 45-year-olds getting pregnant and 47-year-olds getting pregnant and 49-year-olds getting pregnant and 51-year-olds getting pregnant and 53-year-olds getting pregnant and 55-year-olds getting pregnant and 57-year-olds getting pregnant and 59-year-olds getting pregnant and 61-year-olds getting pregnant and 63-year-olds getting pregnant and 65-year-olds getting 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PERMANENT UNATTACHED PRIMARY & NURSERY TEACHERS

Scale 1/2
Required April 1986

This authority has an established pool of Unattached Teachers. These Teachers are allocated to schools to provide general cover for short and long term absences and unfilled vacancies. Scale 2 may be available to suitable candidates. THESE POSTS ARE NOT SUITABLE FOR PROBATIONERS.

Applications are invited from enthusiastic Teachers who wish to take advantage of the teaching opportunities that this Borough offers.

The Borough is particularly keen to ensure that members of the ethnic minority groups are well represented in our teaching force. We therefore would particularly welcome your application if you are from an ethnic minority background.

Newham welcomes applications from qualified teachers at any time for posts related to their qualifications and experience for full or part-time employment.

London Allowance: £1038.

Application forms/further particulars (s.a.s. please) available from The Director of Education to whom completed forms should be returned by 18th March 1986.

Education Offices, 379/383 High Street, Stratford, E15 4RD.

An Equal Opportunity Authority



PRIMARY SCALE 1 PERMANENT POST APRIL 1986

Applications are invited from enthusiastic newly qualified and experienced teachers, who are seeking the opportunity to teach in the 4+ - 11 range with effect from 14th April 1986.

Having, one of the largest London Boroughs is a lively and caring authority. It offers excellent professional support for its teachers at all stages of their careers including well over 100 in-service courses each term. Having is well placed on the edge of the Essex countryside, and yet within easy reach of London and all its facilities to which there is easy access by public transport both road and rail.

Closing date: 21st March 1986.



Application forms are available, (see please) from the Director of Educational Services (ref: STAFFING/DHT) Mercury House, Mercury Gardens, Romford RM1 3DR. (04313)

London Borough of Croydon Education Committee

Has vacancies for Infant teachers, Scale 1 at the following schools from 14th April 1986:-

1. Castle Hill Infants - Middle Infant class Dunley Drive, New Addington, Croydon CR0 0RJ.
2. Davidson Infants - Middle Infant class Dartnell Road, Croydon CR0 6JA.
3. Fairholme Infants - Middle Infant class Fairholme Avenue, New Addington, Croydon CR9 0AA.
4. Spring Park Infants - Top Infant class Bridge Road, Croydon CR9 9HQ.
5. Waddon Infants - Reception class Purley Way, Croydon CR0 4RG.
6. Witherbourne Infants - 0 Reception class Witherbourne Road, - 0 Middle Infant class Thornton Heath, Surrey CR4 7GT.

Application form available from the Director of Education, Education Department (TAS), Telephone 01-886 4433 Extn 2808.

These posts are exempt from the LMGSC procedures but applications from employees of the GLC or MCC's with relevant experience will be welcome.

PRIMARY EDUCATION continued

REDBRIDGE

DOWNSHALL INFANTS' SCHOOL
Farnham Road, Seven Kings, Havering E15 7GS
SUV
Head: Mrs. A.C. Matthews
Tel: 01-598 1206

Required for September 1986: TEACHER (Scale 2) Curriculum development with special responsibility for Science. Applications are invited from suitably qualified and experienced teachers for the above post, which is on Scale 2 with Outer London Allowance. Remuneration and other fringe benefits payable in approved cases.

Application forms are available from and returnable to the Director of Education, 379/383 High Street, Stratford, E15 4RD. Closing date: 21st March 1986. (110020)

RICHMOND UPON THAMES

LONDON BOROUGH OF RICHMOND UPON THAMES
(An equal opportunity employer)

HOLY TRINITY C.E. JMI
Carrington Road, Richmond, Surrey TW10 5AA

SCALE 2 TEACHER plus £678 Outer London Allowance

Required for September 1986, an experienced and enthusiastic teacher to be responsible for the Mathematics/Science. A pleasant, lively and possible, boys' games would be an advantage.

Applicants must be committed Christians.

Forms and further details (for local s.a.s. from Director of Education, Richmond, Surrey TW10 5AA, Tel: 01-891 3000, or by Friday 21st March 1986. (110020)

SHEFFIELD
CITY OF SHEFFIELD
THE HEALTH
EDUCATION COUNCIL
Project Director required. Please see ad on Page 78. (18604) 110020

SUFFOLK
COUNTY COUNCIL
NORTHFIELD JUNIOR SCHOOL
St. Margaret's Road, Lowestoft NR34 4HN
- 13, R01 334

Required for September 1986, an experienced teacher for the post of CURRICULUM DEVELOPMENT TEACHER (Scale 2). The successful applicant will be expected to play a leadership role in the school's curriculum development. The school is a voluntary aided school. Details available from the Headteacher on receipt of a s.a.s. from the Headteacher. Closing date: 21st March 1986. (110020)

SURREY
EDUCATION COMMITTEE
LAURENCE SCHOOL
Alphington Avenue, Primley, Colindale, London NW9 1JL
(No. on R01: 195)

Required for September 1986, a Scale 2 post for an enthusiastic First School Teacher with an interest in the school's development. The successful applicant will be expected to play a leadership role in the school's curriculum development. Details available from the Headteacher on receipt of a s.a.s. from the Headteacher. Closing date: 21st March 1986. (110020)

SURREY EDUCATION COMMITTEE

LAURENCE SCHOOL
Alphington Avenue, Primley, Colindale, London NW9 1JL
(Previous applicants need not re-apply)

Required for September 1986, a Scale 2 post for an enthusiastic First School Teacher with an interest in the school's development. The successful applicant will be expected to play a leadership role in the school's curriculum development. Details available from the Headteacher on receipt of a s.a.s. from the Headteacher. Closing date: 21st March 1986. (110020)

EDUCATION COMMITTEE
REDAVENTHROPES SCHOOL
Middle School
Tel: Dorking 884506
(Previous applicants need not re-apply)

Required for September 1986, a Scale 2 post for an enthusiastic First School Teacher with an interest in the school's development. The successful applicant will be expected to play a leadership role in the school's curriculum development. Details available from the Headteacher on receipt of a s.a.s. from the Headteacher. Closing date: 21st March 1986. (110020)

SURREY EDUCATION COMMITTEE

KENTON MANOR SCHOOL
Beachwood Avenue, Sunbury-on-Thames, Middlesex TW10 5AA

Applications are invited from enthusiastic and experienced teachers for a Scale 2 post which carries responsibility for the development of MATHEMATICS throughout the school. ASRS (Mathematics) with games in the middle school would be welcome. A strong and lively interest in the primary curriculum is required.

Application forms available from North East Area Education Office, 379/383 High Street, Stratford, E15 4RD. Closing date: 21st March 1986. (110020)

WALTHAM FOREST
ST. MARY'S C.E. OF E
PRIMARY SCHOOL
Rectory Road, London E17 6RD
Head: Mr. R. Church

Required for September 1986, an experienced teacher for the post of CURRICULUM DEVELOPMENT TEACHER (Scale 2). The successful applicant will be expected to play a leadership role in the school's curriculum development. Details available from the Headteacher on receipt of a s.a.s. from the Headteacher. Closing date: 21st March 1986. (110020)

WEST SUSSEX
PRIMARY C.E. (AIDED)
SCHOOL
Pulborough, West Sussex PO20 9AA

Required for September 1986, a Scale 2 post for an enthusiastic First School Teacher with an interest in the school's development. The successful applicant will be expected to play a leadership role in the school's curriculum development. Details available from the Headteacher on receipt of a s.a.s. from the Headteacher. Closing date: 21st March 1986. (110020)

WILTSHIRE
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WILTSHIRE
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LAURENCE SCHOOL
Alphington Avenue, Primley, Colindale, London NW9 1JL
(No. on R01: 195)

Scale 1 Posts

BARNET
LONDON BOROUGH
EDUCATION COMMITTEE
LAURENCE SCHOOL
Alphington Avenue, Primley, Colindale, London NW9 1JL
(No. on R01: 195)

Required for September 1986, a Scale 1 post for an enthusiastic First School Teacher with an interest in the school's development. The successful applicant will be expected to play a leadership role in the school's curriculum development. Details available from the Headteacher on receipt of a s.a.s. from the Headteacher. Closing date: 21st March 1986. (110020)

BIRMINGHAM
TITE BLUE COAT SCHOOL
INFANTS TEACHER, SCALE 1
1. No under Preparatory Schools. (110022)

BRENT
LONDON BOROUGH OF
EDUCATION COMMITTEE
LAURENCE SCHOOL
Alphington Avenue, Primley, Colindale, London NW9 1JL
(No. on R01: 195)

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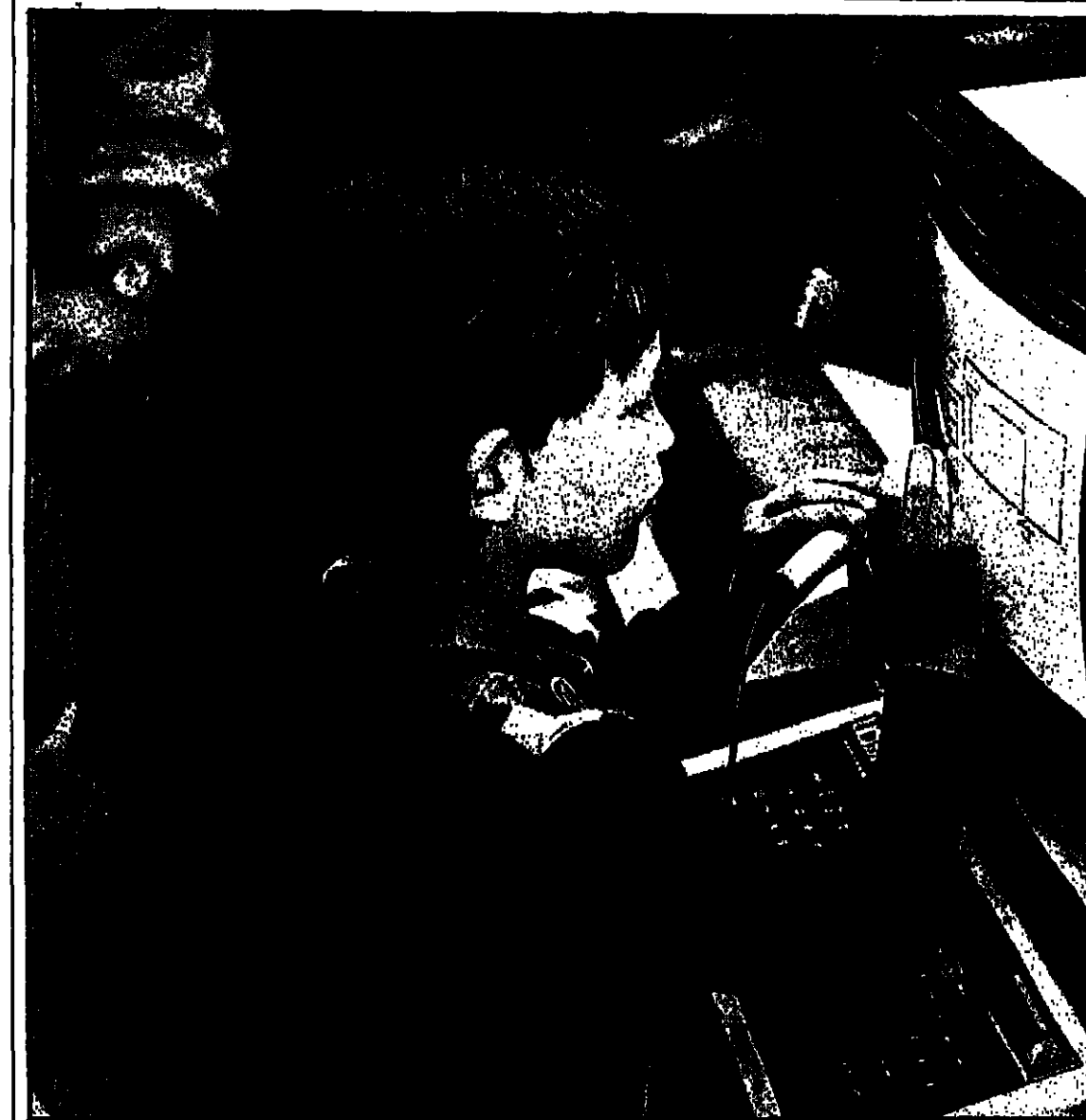
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EXTRA

COMPUTERS IN EDUCATION



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Software solutions

Leslie Gilbert argues that the provision of software to schools cannot be left solely to orthodox market forces

A few years ago I was asked by one of Britain's most prestigious publishers whether it would make commercial sense to go into the publication of computer software for schools. My answer was a decided yes. If I were asked the same question today I would have to express many reservations. I believe that the whole issue of providing schools with the software they need calls for a fundamental re-think.

This conclusion has been forced on me by a study I recently carried out for the Council for Educational Technology. The initial focus was on the relatively narrow issue of the mechanisms by which software can be distributed to schools. While this is important, and I will come back to it later, I soon realised that software users, developers and publishers had deeper concerns.

The very use of the term "publishing" encourages one to think of a software package as analogous to a book. In one sense, of course, it is. A typical package is intended to be used in the classroom rather than as a textbook is used - whether to inform, to illustrate, to reinforce or to give practice. Good packages do their job very well, and fully justify the use of computers. Hardly a day goes by without a

this, although there was almost universal criticism of the quality and usefulness of many of the packages on offer.

However, there is a crucial economic respect in which a software package differs from a textbook. Take, as an example, a program which illustrates a topic studied in O level and CSE physics courses. In a well-known textbook of 586 pages, the topic is dealt with in 10 pages. The book costs £7. The price of the program cassette and its booklet is about £14. So, pro rata, the program is "worth" 12 pence. There is no way that a program could be produced and marketed for a few pence. While the computation cannot be taken seriously, it is fair to note that a school could buy two copies of the book for the price of one copy of the program.

Does this imply that the package is overpriced? There is certainly a feeling in education that software is too expensive. As part of the study, I sent an enquiry to all the computer inspectors and advisers in England, Wales and Northern Ireland. Of the 80 who responded, two thirds wanted lower prices. Given the dire financial difficulties confronting education, this is

continued on next page

WEST SUSSEX

ST. MARY'S C.E. (AIDED) PRIMARY SCHOOL
Pulborough, West Sussex
R12 2AA
Required September, 1986.
Scale 1 teacher required to teach a middle junior class. Communicant members of the Church of England preferred.
Application form and details from the headteacher or re- (17500) 110022

WILTSHIRE

Please see display advertisement on Page 110022 (17504)

Middle School Education

Headships

EALING
LONDON BOROUGH
EDUCATION SERVICE
BRENTFORD MIDDLE SCHOOL
Kennedy Road, Hanwell W7 1JL
Head required for September 1986.
Group 5 salary plus £1,038 London weighting. (SAR) and further details from Chief Education Officer, Hadley House, 79-81 Uxbridge Road, London W3 5BU (SAR) to be returned by 31 March 1986. (17464)

EALING
LONDON BOROUGH
EDUCATION SERVICE
DAILY MEADOW MIDDLE SCHOOL
Ryecliff Road, Southall, Middx.
HEAD required for this new 2 form entry school due to open in September 1986.
Group 4 salary plus £1,038 London weighting.
Relocation expenses may be payable.
Application forms and further details from Chief Education Officer, Hadley House, 79-81 Uxbridge Road, Ealing W3 5BU (SAR) to be returned by 31 March 1986. (17466) 120010

HARROW EDUCATION COMMITTEE

ROXETH MANOR MIDDLE SCHOOL
Eastcote Lane, South Harrow, Middlesex HA2 9AG.
Tel: 01-422 4603.

Applications are invited from teachers with relevant qualifications and experience for appointment as Deputy Head of this Group 5 Middle School (8-12 years) for September 1986.

Outer London Allowance Payable.

Application forms from and to be returned to the Headteacher by 21st March 1986. Please enclose a SAE.

Harrow is an Equal Opportunity Employer.

Bishop Bell
Church of England (Aided) Secondary School,
Priory Road, Eastbourne, East Sussex

Comprehensive mixed: 11-18, Group 10
Roll: 754

Head Teacher

Applications are invited from Communicant members of the Church of England who have sound experience and a commitment to comprehensive education, for the post of Head Teacher of this school. The appointment will be from September 1986.

Relocated grants available in approved cases.

Application forms and further details (see please) from and returnable, to the County Education Officer, PO Box 4, County Hall, St Anne's Crescent, Lewes BN7 1SG (Ref: PT/DJB), not later than March 21st.

Deputy Headships Second Masters/ Mistresses

DORSET
ST. MARY'S C.E. MIDDLE SCHOOL
Puddletown DT2 9SA
(Age Range 9-13)
Required September, 1986.
Required HEADTEACHER - GROUP 5.
Details and application form from Headmaster, (see Overseas) returnable by 25th March, 1986. (17591) 120012

DORSET
HAMWORTHY MIDDLE SCHOOL
Ashmore Crescent, Bournemouth, Dorset (Age Range 9-13)
Required September, 1986.
DEPUTY HEAD TEACHER - GROUP 5.
This is a re-advertisement and previous applicants are still under consideration. Applications forms and further details from the Staffing Officer, Eastern Area, Education Office, Portman House, Richmond Hill, Bournemouth BH8 5ER. Closing date 1.4.86. (17595) 120012

ISLE OF WIGHT

VENTNOR MIDDLE SCHOOL
Newport Road, Ventnor, IOW PO38 1BQ
9-13 Mixed Middle School 450 on roll
Applications are invited from suitably qualified and experienced teachers for the post of SECOND MASTER/MISTRESS (Group 7). The vacancy arises through promotion. The appointment will take effect from September 1986.

The successful candidate will be one of a team enjoying parity of esteem within the school. The responsibilities of the post will be to reflect the particular strengths and interests of the school, but will include overall responsibility for the curriculum and/or organisational matters.

Application forms and further details from County Education Officer, PO Box 100, to whom completed forms should be returned by 21 March, 1986. (SAR) please. (17401) 120012

By Subject Classification

Art and Design

Scale 1 Posts

UNITED ABAB EMIRATES
SHARJAH
Chase Overseas. (17672) 121222

Craft, Design & Technology

Scale 1 Posts

KIRKLEES
METROPOLITAN COUNCIL
DIRECTORATE OF EDUCATIONAL SERVICES
CHICKENLEY MIDDLE SCHOOL
Princes Road, Chickenley, Wakefield WF2 8QT
Ref: 199
Required for the Summer Term a temporary SCALE 1 teacher for a class of 11/12 year olds in this 4-12 middle school.

An ability to teach C.D.T. would be an advantage. Application forms (a.s.e. please) from the Director of Educational Services (Ref: 199) to the Education Officer, 101 GOW to whom completed forms should be returned within 14 days of this advertisement. An Equal Opportunity Employer. (17467) 124122

Mathematics

Scale 1 Posts

BEDFORDSHIRE
NORTHERN AREA
HARROLD PRIORY MIDDLE SCHOOL
The Green, Harrold, Bedfordshire MK43 4AE
Tel: Bedford 780346
Required for September 1986, a Head of Mathematics and Computer Studies, Scale 2. Application forms and further details from the Headmaster, (a.s.e. please). 123422 (17566)

Cheshire

ALL HALLOWS ROMAN CATHOLIC (SPECIAL AGREEMENT) HIGH SCHOOL BROOKLANDS AVENUE MACCLESFIELD

Headship (Group 11)

The post will become vacant in September 1986 when the present head retires.

All Hallows is a 11-18 mixed Roman Catholic comprehensive, established as such in September 1975 and is therefore comprehensive throughout the school.

The school currently has about 980 pupils on roll, including some 145 in the 6th form and is running at 6 form entry.

Applicants must be practising members of the Roman Catholic Church.

Application forms and further particulars are available from the District Education Officer, District Offices, Chapel Lane, Wilmslow, Cheshire SK9 1PL. Closing date 21 March 1986. (04309)

HEADTEACHER

(Re-Advertisement)
CHELMSFORD, ST. JOHN PAYNE R.C. (AIDED) COMPREHENSIVE SCHOOL (Group 11), Partridge Avenue, Chelmsford

Number on roll (September 1985) 1036, including Sixth Year of 102.

The Governors invite suitably qualified and experienced practising Roman Catholic Teachers to apply for appointment as Headteacher of this Voluntary Aided School. The post is vacant from September, 1986.

Relocation allowances payable in appropriate cases.

Please send foolscap a.s.e. for form and details to Mid Essex Area Education Office, P.O. Box 308, 'A' Block, County Hall, Chelmsford, Essex, CM1 1JW. Closing date: 28th March, 1986.

Previous applicants will be re-considered.

ESSEX
County Council

KIRKLEES

METROPOLITAN COUNCIL
DIRECTORATE OF EDUCATIONAL SERVICES
BROADSHAW MIDDLE SCHOOL
Bradford Road, Gomersal, West Yorkshire, BD18 4BE
Ref: 189
Required for the Summer Term a SCALE 1 teacher of French or an experienced Teacher of Modern Languages. Scale 1 posts. (17459)

Modern Languages

Scale 2 Posts and above

MERTON
LONDON BOROUGH OF
EDUCATION COMMITTEE
OPPORTUNITIES EMPLOYER
MORDEN FARM MIDDLE SCHOOL
Arden Road, Morden, Surrey SM4 4QJ
Tel: 01-357 3312
Head Teacher: Mr. K.A. White
Age Range: 9-13 years
No. on Roll: 454
Required April or September, 1986 French Co-ordinator, Scale 2.
CLOSING DATE: 21st March 1986.
Application forms and further particulars of the post are available from the Head Teacher at the above address. Please enclose stamped addressed envelope. (17226) 123620

Scale 1 Posts

KIRKLEES
METROPOLITAN COUNCIL
DIRECTORATE OF EDUCATIONAL SERVICES
BROADSHAW MIDDLE SCHOOL
Bradford Road, Gomersal, West Yorkshire, BD18 4BE
Ref: 189
Required for the Summer Term a SCALE 1 teacher of FRENCH and MATHEMATICS in this 9-13 middle school.
Application initially by letter with curriculum vitae and the names of two referees to the Head Teacher at the above address. Successful candidates should be returned to the Headmaster, (a.s.e. please). 123422 (17566)

Scale 1 Posts

SUFFOLK
COUNTY COUNCIL
RE-ADVERTISEMENT
ST. JAMES' C.E. AIDED MIDDLE SCHOOL
Village Road, Bury St. Edmunds, Suffolk IP8 3JL
Required from September, 1986, HEAD OF SCIENCE (Scale 2, 3 posts available for suitable candidate who can act as Year Leader. Candidates must be in contact with a member of a Church school.
Previous applicants should indicate if they wish to be re-considered.
Application forms and further details available from the Headteacher at the School. Completed forms should be returned by 25 March 1986. (17505)

Scale 1 Posts

BEDFORDSHIRE
SOUTHERN AREA
BROOKLANDS MIDDLE SCHOOL
Brooklands Drive, Luton, Bedfordshire, LU1 3JL
Tel: Bedford 780346
Required for Easter, 1986, a Head of Science, Scale 2, for a large middle school with 11-18 mixed entry. The post is vacant from September 1986. Application forms and further details available from the Headmaster, (a.s.e. please). (17466)

Music

Scale 2 Posts and above

SUFFOLK
COUNTY COUNCIL
ST. JAMES' C.E. AIDED MIDDLE SCHOOL
Village Road, Bury St. Edmunds, Suffolk IP8 3JL
Required from April, 1986 a newly qualified teacher (Scale 1) or an experienced Teacher of Music. Scale 2 posts available for suitable candidate who can act as Year Leader. Candidates must be in contact with a member of a Church school.
Application forms and further details available from the Headteacher at the School. Completed forms should be returned by 25 March 1986. (17505)

Pastoral

Heads of Department

SUFFOLK
COUNTY COUNCIL
ST. JAMES' C.E. AIDED MIDDLE SCHOOL
Village Road, Bury St. Edmunds, Suffolk IP8 3JL
Required from April, 1986 a newly qualified teacher (Scale 1) or an experienced Teacher of Music. Scale 2 posts available for suitable candidate who can act as Year Leader. Candidates must be in contact with a member of a Church school.
Application forms and further details available from the Headteacher at the School. Completed forms should be returned by 25 March 1986. (17505)

Physical Education

Scale 1 Posts

BEDFORDSHIRE
NORTHERN AREA
HARROLD PRIORY MIDDLE SCHOOL
The Green, Harrold, Bedfordshire MK43 4AE
Tel: Bedford 780346
Required for September 1986, a Head of Mathematics and Computer Studies, Scale 2. Application forms and further details from the Headmaster, (a.s.e. please). 123422 (17566)

Science

Heads of Department

SUFFOLK
COUNTY COUNCIL
RE-ADVERTISEMENT
ST. JAMES' C.E. AIDED MIDDLE SCHOOL
Village Road, Bury St. Edmunds, Suffolk IP8 3JL
Required from September, 1986, HEAD OF SCIENCE (Scale 2, 3 posts available for suitable candidate who can act as Year Leader. Candidates must be in contact with a member of a Church school.
Previous applicants should indicate if they wish to be re-considered.
Application forms and further details available from the Headteacher at the School. Completed forms should be returned by 25 March 1986. (17505)

Scale 1 Posts

BEDFORDSHIRE
SOUTHERN AREA
BROOKLANDS MIDDLE SCHOOL
Brooklands Drive, Luton, Bedfordshire, LU1 3JL
Tel: Bedford 780346
Required for Easter, 1986, a Head of Science, Scale 2, for a large middle school with 11-18 mixed entry. The post is vacant from September 1986. Application forms and further details available from the Headmaster, (a.s.e. please). (17466)



SURREY
COUNTY COUNCIL

* FRINGE AREA LONDON ALLOWANCE £284 P.A. THROUGHOUT THE COUNTY.
* Generous relocation expenses in approved cases.
* Assistance with temporary housing may be available.

HEADSHIP

NORK PARK COUNTY SECONDARY SCHOOL
Ploquets Way, Banstead, Surrey
Group 10, 12-18 Mixed Comprehensive
NOR (Sept 85) 725, including 90 in Sixth Form.

HEADTEACHER required from September 1986 for the Comprehensive school.

Salary scale: £16,824 - £18,141 p.a.
Application form and further details from County Education Officer (TP/MVB), County Hall, Kingston upon Thames KT1 2JL.
Closing date: 21st March 1986.

(17520)

County Council

County Council

EXTRA

EXTRA

Software solutions *continued*

hardly surprising. The present rate of spending on software is pathetically low. The sales of software to schools in 1984 totalled about £1.7 million, equivalent to just four simple packages for each school.

However, while education may think that software is too dear, the publishers say that it is too cheap. They would, wouldn't they, I hear. Of course the publishers want to maximise their profits. But even if we assume a 10 per cent net profit on software, which seems to be highly optimistic, the annual profit on a total sale of £1.7 million is a mere £170 thousand. Dividing this among the several score of publishers trying to get a reasonable return from the educational market makes one wonder why they bother.

Some users say that they would be happy to trade price reductions against less elaborate packaging and less glossy booklets, a point of view that is uncomfortable to the companies whose main business is book publishing. And, anyway, why should schools be expected to make do with tatty products? To some extent however it is true that the publishers have got themselves to blame. Marketing practices are something of a mess. Some publishers require schools to order direct which involves, in the case of book publishers, the setting up of special sales departments - because textbooks are not subject to this curious requirement.

Promotion, also, is costly; in the end, schools pay for all those separate catalogues. In the longer term, incidentally, the need for catalogues will be reduced by the national database of educational resources whose development the Department of Trade and Industry is intending to finance.

There is a strong case for publishers seeking ways of collaborative promotion and marketing, with a clearer separation between the acts of publication - which, by definition, must be specific to each company - and promotion and distribution - which need not. Indeed, as my report was being completed, eight leading publishers came together to form the British Educational Software Associates. BESA has appointed 150 specialist retailers across the country who are stocking, ordering and demonstrating software, and giving advice to customers. (Details from BESA, 4 Little Essex Street, London WC2R 3LP. Tel 01-836 6633). The initial concentration, inevitably, is on packages that have a wide applica-

tion, in the home as well as the school. The publication of more specialized software is likely to remain a commercially unviable at the kind of price that schools can afford. The market for many excellent packages, especially those aimed at the upper levels of secondary education, may never be more than a few hundred copies.

For this reason it may be necessary to hand over the publication and distribution of at least some educational software to the educational sector itself. Already some of the regional centres established under the auspices of the Microelectronics Education Programme (MEP) are producing and publishing software of high quality and at very reasonable prices. The Scottish Microelectronics Development Programme (SMDP) has worked in this way from the outset. Considerable economies are possible. For instance, the centres tend to fill a cassette or disc with an assortment of programs, leaving the school to copy off individual programs at will.

There could be either a consortium of publishing groups, or a national centre, though the latter need not exclude the former. A national centre could organize the development of advanced software, which I discuss in a moment, and would have the resources to study the market and to explore innovative methods of distribution. It could not hope, however, to give direct support to all the schools in the country, but would need to work closely with regional and local agencies. SMDP is in many ways a model of what I have in mind. A representative body would ensure that the operations were geared to the real needs of teachers. About half of the respondents to my enquiry favoured an arrangement along these lines.

To cover adequately every topic in every area of the curriculum, and at every ability level, would require thousands of highly specific, single topic packages. One estimate is as high as 200 thousand. No one could sensibly envisage development on this scale. A suggested alternative would be to produce a very few multi-purpose packages, each capable of being tailored by users to a wide variety of applications.

The design of "all singing, all dancing" packages would be a great challenge, but there are those who believe that it must and can be done. Development would have to be undertaken by special units, and would not come cheap. We may be talking of upwards of a quarter of a million pounds a package. However if, say, five packages would meet most needs of most pupils, the cost of the set would be only about 15 pence per pupil, which is even

less than the present annual rate of expenditure on much less sophisticated material. Moreover, the distribution problem would all but disappear; it would be a simple once-for-all operation to send every school a parcel of packages, supplemented by occasional revisions or replacements.

This would not be a comprehensive solution. To set up a package for a particular application would need training, and might take hours of work. The need for unforeseen and rapid access to simple utility programs would remain. They could continue to be produced as at present by individuals or small groups, banked at local resource centres and obtained within a day or two. They could also be stored in large computers, from which they could be called down the telephone network as needed and stored on a floppy disc in a matter of seconds and at the cost of a few pence.

Software can also be distributed electronically via the television services, using the teletext system. The BBC has been doing this on a small scale for some time (if you have not come across it, look at pages 700 et seq on CEEFAX on BBC1). Given the finance, the broadcasters could expand the output almost without limit.

The actions taken to get hardware into our schools have been imaginative and relatively generous. I estimate the current investment to be in the region of £100 million. However, as far as computer assisted learning is concerned a computer system is simply a device for running software. What then is the sense of policies whose outcome is that the annual expenditure on software purchase is running at less than two per cent of the capital value of the equipment? The government announcement in July 1984 of a special grant of £3.5 million over three years for the purchase of commercial software was conceived, I suspect, primarily as a lifeline to the publishers.

MEP would have been the natural channel for initiatives to bring together and advance the various interests, commercial and public. The strange decision to disband it next month leaves educational computing outside of Scotland, which has had more sense, in a difficult position. Fortunately, CET remains as a focus of action. Unfortunately, its resources are severely limited. I suggest that those who care about educational computing should try to persuade government that the problem cannot be left solely to orthodox market forces.

* The Distribution of Microsoftware in Educational Technology, by L.A. Gilbert. CET Working Paper 26, 1985 ISBN 0 86184 151 4.



Nicely judged?

Eric Deeson argues that the software support scheme will bring only small benefits to schools and publishers

At the end of January Geoffrey Hubbard let go the helm of the Council for Educational Technology (CET). Behind him were 16 years of vision and moulding progress in what is a fascinating area. In his farewell message to the CET, he remarked on "the inverted logic by which a leading position in a field having been obtained, that position is then thrown away by nicely judged underfunding".

Geoffrey Hubbard may or may not have been thinking at that point about MEP. MEP is the Government's Microelectronics Education Programme, whose lamps are now going out all over the country. (Richard Fothergill, now MEP's Director, will shortly slip into the CET seat vacated by Geoffrey Hubbard.)

The level of MEP's funding has been a source of deep disillusion since the programme started. Will the same be true of the Schools' Software Support Scheme? SSSS is one of MEP's two successors which has most obvious potential impact on teachers and taught. (The other is the Microelectronics Support Unit - MSU.)

The essence of the Schools' Software Support Scheme is that the Department of Trade and Industry will assist in the purchase of educational software, commercially produced within the EEC until March 1988.

The sums concerned are not huge - £3.5 million in total. Indeed, there's some feeling that it's not worth the trouble of claiming. There's also a lot of unhappiness about each of the four restrictive aspects of the scheme. The fact that business software doesn't officially count rankles. The stipulation that it must be software means that hardware/software packages will need complex mathematics for claims.

The requirement that they should be commercially produced will prevent i.e.s from purchasing software produced by themselves or other authorities. And the stipulation that they should be produced in the EEC excludes non-EEC products, particularly important for the Nimbus.

There are various other areas of unhappiness with the scheme. A DTI statement dated October 1, 1985, opens by saying that the "support is designed to promote greater expenditure on educational software by local education authorities and by independent schools throughout the UK". Teachers are expressing their concern that the scheme encourages local authorities to spend without regard to classroom needs.

A similar furore occurred when the Government decided to subsidize the purchase for schools of microcomputer hardware. At that time, on the grounds of the need for local uniformity, most authorities allowed no say in the equipment bought. No say to heads, to class teachers, to pupils, to parents, to governors. In some places regulations for non-IT hardware were torn up in others parent-teacher associations wanted to donate such-and-such a machine were firmly and less than politely snubbed. In many the teaching staff were banging their heads against walls of frustration.

Are we to see all that again? Probably not. The new scheme is more carefully worded, the sums of money

are smaller and computers are less exciting. (And, after a year of agonising "industrial action", maybe teachers care less.)

There will be waste for sure - in some cases i.e.s will give to schools software for computers they don't have or don't use. Elsewhere places will have to go on managing without desperately-needed programs.

How have the local authorities reacted so far? Or, rather, how have their computing advisers reacted? It's on their shoulders that the responsibility of doing something about the DTI's money falls. In recent weeks I've talked with or invited views from a large number of advisers. No clear pattern has emerged as to how the scheme is being administered around the country. What has emerged is the feeling that the money's hardly worth the hassle, the scheme is too restrictive and the i.e.s "knows best".

Not one of the letters I received mentioned pupils (except if quelling numbers), only a couple said anything about classrooms and teachers - and several didn't use the word "school". It certainly appears that in most parts of the country the decisions about what to purchase have been made centrally.

On the inadequacy of the money, various points were made. It was "not sufficient to buy half our schools a Wordwise chip card"; "the difficulties of coping with the accountancy side make the whole scheme highly unattractive"; "authorities such as N do badly"; "Of course there was gratitude too: 'a welcome supplement'; 'the scheme will prove a success'; 'this will help us'; 'a useful stimulus'; 'misery: 'feeling rather sore'; 'exceedingly unhappy'; 'I am apprehensive'.

SSSS was announced, significantly, as schools in most parts of the country were breaking up for the summer. Only half a million pounds was made available for the financial year just ending and the authorities were expected to match the central expenditure in any way. In the coming full year they will all have four times as much and they will have to show pound-for-pound support from their own funds.

Perhaps the haste and hassle of sorting out the new scheme in a very short period will lead to more thoughtful and cost-effective spending in 1986/7. Certainly some authorities plan licenses and other central purchase schemes, basing their orders to some extent on recommendations from the classrooms. Others are devising "approved" lists from which schools can order.

It seems likely, however, that the coming year will bring many disappointed software houses. Among the software publishers and package producers there's a great optimism that their long-term cash flow problems will now come to an end and that Government support will swell their coffers very significantly. As a result many are sending out circulars which imply that if teachers order their *Maisie* *Invaders* or whatever, the DTI will pay the bill. As far as SSSS is concerned, 1986 will bring very many disappointed software houses. And it will bring real progress to sadly few classrooms.

We've reached a plateau," said someone at a meeting not long ago. She went on to explain that we were at the end of a development phase: that all schools now had computers, there was a wealth of software (I don't think "wealth" is the word I would use; more like "pile") and that the present problem lay in deciding where to go from here.

Enjoying, as I do, the bliss of the simple-minded, I find it difficult to worry about more than one thing at a time. As I have wandered these past two years from school to school and from classroom to classroom in fourteen i.e.s, I am conscious of the problem out of where we go from here but what we do right now. At this minute I am not thinking so much about coping with the next generation of machines (though I hope someone is) as bringing some stability to those trying to avoid falling flat on their faces right here on the spot.

Put your hand in mine and let me take you to a primary school, somewhere in England. The school has more than the average number of computers - almost enough to have one in every classroom - and that is how they are deployed. The head is enthusiastic and writes articles for the TES. Last spring almost the whole of the two top years were wracked by Mary Rose mania. Trips to the wreck were organised, stories were written, paintings were painted, models were made, a deep-sea diver came in dressed in wet suit and flippers to show slides of the underwater archeology and of course the excellent Mary Rose computer program (Ginn Software) was used as a focus for the project. The whole exercise was, as Adrian Mole would have said, "dead good". It was also a very difficult act to follow.

There are very few programs that allow us to do something we hadn't thought of doing whilst permitting us to believe that it was the very thing we would have done anyway. Usually, a program that fits in with the activities we had already planned is, depending on the way you look at it, either offering us a new medium while allowing us to retain the initiative or else reinforcing our existing, perhaps traditional, methods of teaching. On the other hand, something that is truly innovative is, again according to how you view it, either asking you to do something you don't want to do or encouraging you to adopt a different approach to your teaching and classroom management.

"The wicket's not taking much spin at the moment," says the head. He seems to mean that, after the Mary Rose episode, teachers have not retained a grip on the opportunities or that computers are not, for the moment, changing the direction of teaching from the straight and narrow or perhaps he means something else entirely. You work it out.

As we walk around the school, we see the computer in a variety of roles. In some classrooms it isn't being used at all. Well, there's no rule that says a computer has to be used one hundred per cent of the time, is there? Still, in one machine to every forty pupils and children in the next room trying to do some wordprocessing on a single computer, it does seem a bit of a shame, doesn't it?

"At my last school we used to wheel two or three computers into the same room," explains one teacher, "but here they're networked to a hard disc,

On a plateau

Where do primary schools go now? Bob Sheed seeks an answer

so we can't move them. Mind you, it's very convenient having all the software permanently available, and you never have to worry about borrowing a printer."

As we talk to more teachers one thing becomes very apparent. Integrating the use of a single computer with other classroom activities requires not only imagination but more lesson planning than teachers have time for, certainly if it means making use of the computer in every, or nearly every, lesson. I will say again, there is no reason why the computer should be used in every lesson. Yet we really cannot afford to scatter machines around a school with only a casual regard for the extent to which they are

used. We might be able to do that when we have reached computer saturation point, whatever that might be, but at the moment, having one computer unused even for half an hour leaves another teacher struggling with a single computer when two would be so much more effective.

If the computer is not to stand idle for a lot of the time or be in such great demand that a long queue (mental or physical) develops, then the other activities in which the children are engaged must be organised in such a way that, when the moment comes for a child to use the computer, that moment occurs at a different time for each child. Group work eases the planning, of course, but the problem

remains essentially the same.

Some teachers will not recognise this as a familiar problem. In many primary schools there are so few computers that teachers have the use of the machine only once or twice a week and have no difficulty in finding useful things to do with it. There is evidence, that, once a teacher has the use of a computer for longer than there is time to plan for its integrated use, one of two things is likely to happen. Either the computer will not be used or it will be used for a purpose that is not related to other classroom activities. It may even be used as a "treat" for those children who have finished their other work before the rest.

A small number of schools have

opted for a different system: clustering. Machines clustered in bunches of four make lesson planning much easier. With children working in pairs around a third of the class can get to a computer at any one time and every-one has got room to get away from the computer to do other, equally important things. Four machines spread over four classrooms will see, at any given moment, two of them not being used, one being used for something entirely irrelevant and the other, genuinely integrated into the lesson, with teacher and children under unnecessary pressure. A cluster of four machines cannot stand idle; someone will always be wanting them. At the same time, the cluster makes the use of the machines easier to organise, they are more likely to be used beneficially. Bob Sheed was formerly Co-ordinator for Computer Education with the Microelectronics Education Programme (Eastern and East Midlands Regions), and is now Advisory Teacher for Computer Education with the London Borough of Ealing.

Millions of papers have been written on Apple. (One was even written about it.)

"A Revolution in Academic Publishing?" is not, we're pleased to say, manufacturer-speak. It's the title of a paper by Roger Emeny of Reading University And as befits a treatise on the uses of Apple™ computers in education, it was entirely composed on and printed out by one.

Those uses are as varied as the subjects being studied in British schools and universities today, where once computers were confined to the Computer Studies course.

A learning tool. At Newcastle Polytechnic, Apple computers have been introduced into the BA (Honours) Accountancy course. By learning the techniques of computer-based financial modelling with software used in business today, students are combining academic study with a preparation for work.

Says Senior Lecturer Adrian Woolley, "I am very impressed with the Macintosh™ ease of use and the quality of the software available... I see it as a very advanced productivity tool."

The Humanities or the Sciences. The same polytechnic is applying computers to the study of Materials Engineering, Acoustics Research and Power Engineering. For instance, students have been writing programmes for the design and testing of components.

Other examples of disciplines where our products are proving valuable include those of Earth Sciences and Psychology at the Open University. Cambridge has several Apple™ 11s in its Surgery and Ancient Greek departments. Reading University uses them to study French and Typographic And staff at Glasgow University find the Macintosh's graphics capabilities particularly relevant for Typographic Studies.

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Apple's obvious strength in the area of word-processing is not being ignored. Donald Halliday of Newcastle Polytechnic, provides a classic example. On top of all his teaching work, Mr. Halliday is also Warden of a Hall of Residence. He explains: "I keep all my records for the Hall on (an Apple 11)... I can do 90% of my day-to-day work on it, and find the word processing module very easy to use."

Many other professors are finding computers useful for preparing their course materials so as to replace expensive, quickly out-dated textbooks. The portability of Apple computers has been seized on by a Professor of the Imperial College. He takes his Macintosh home in order to compose term papers in the strictest secrecy.

And where budgets for administrative staff are restricted, an Apple can often be found, enabling a single secretary to discharge her duties efficiently towards many lecturers.

Easy to learn. Much has been said about the simplicity of learning to use an Apple computer and its software. According to Adrian Woolley, "If you give students the tutorial manual and demo disk, it is largely self-teaching."

Bill Allen, also of Newcastle Polytechnic, goes further. "The adaptability and the wealth of software available for the Apple are the obvious (advantages). The systems are very flexible... and very reliable. You can do on an Apple the kind of thing that people do on \$20,000 development systems."

It is therefore not surprising to learn that there are over 2 million Apple computers at

use in institutes of learning in the United States alone. They are also becoming widely used in business on both sides of the Atlantic, ensuring a high degree of reliability and strong dealer support.

If you would like to learn more about Apple in education, the Macintosh Academic Conference is being hosted by Imperial College on April 5 and 6. Just post the coupon for details. We shall also be pleased to send you further information on our products and preferential pricing for education.

The last word comes from Michael Kimber of Gateshead Technical College. "I haven't seen anything so far that makes me regret our original decision to go with Apple. The machines are working day and night, they are very robust, and they are allowing us to fulfil our commitment to both computer literacy and applications courses. They have been an excellent investment."

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[illegible]

Information provider

Eric Deeson reviews 'Inside Information'

Inside Information.
BBC Publications
£26.95.

At the beginning of the year I spent much of a day trying to put across to groups of Chinese teacher trainers and curriculum developers the nature of Information Technology and the subject's great potential as compared with "traditional" computing courses. I wish I had had this pack with me!

Inside Information - from its tongue-in-cheek title to the furthest nook or cranny of its contents - is a quite remarkable product. It offers a great deal to secondary school and further education teachers, to trainers and teachers' centres - and much too to the mature home learner.

First *Inside Information* practises what it preaches - it is a nice multi-media exposition of its topic, one which is itself an object lesson in communication. It is also a big project with many inputs. Its parts link well together despite that fact, but they do not restrict the user to a single narrow range of approaches as could so easily have happened. This is not just any old collection of multi-media resources on IT; it is in fact an examinable course whose appearance is exciting in a number of ways. Three major bodies participated in its development: the British Broadcasting Corporation (with the audio components already mentioned), BBC Publications (who publish the goodies in the box) - and the City and Guilds Institute.

A number of schools and colleges already offer the City and Guilds course 444 which is based on these components and leads to fully computerized assessment and certification. The educational establishments also give "hands on experience" (though it isn't clear with what detailed guidance).

One of the three components of the package has actually been in the public domain for a long time. The *Inside Information* series of 10 radio programmes (already twice broadcast) tried to capture a lengthy and enjoyable exploration of IT in practice. We are all so spoiled by the TV that it may seem impossible to succeed in putting across such ideas in sound alone - yet (generally anyway) the programmes are successful. Fortunately, you don't need to be yourself or your class (or your tape recorder) to the airwaves, for BBC Publications have taken the

unusual step of popping into the box a couple of cassettes which provide a seam-free edited highlights version of that series of programmes.

The two cassettes are neatly packed into a robust slip-case; the four half-hour programmes they in effect provide are backed by detailed notes. Great for teachers and learners to pick and choose from. £26.95 buys this part of the pack on its own.

The main component of the package is a superbly designed and developed reader. Also available on its own at £8.95 (ISBN 0 563 21102 4) this is a heavy paperback of 224 crammed pages. Two and four-colour printing is used throughout, there being 150 diagrams and photos.

The book is balanced coverage of true IT, one in which computers certainly don't hog the space. It is fairly technical in places, but the author takes great trouble with explanations, illustrations (all kinds) and examples. The various appendices include a long glossary and a good index, though the index perforce covers only the book rather than the course as a whole.

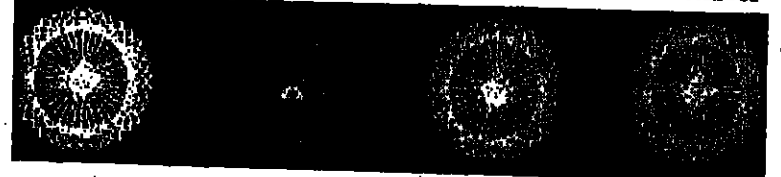
The third component of the package is a cassette for the BBC Micro containing six programs designed to demonstrate aspects of IT in action. The cassette also offers a program to transfer its contents to disc - at the end of side two. The programs (well documented in a 48-page booklet) are generally highly unusual - slowed-down models of real computer systems which allow users to come to grips with the exciting complexity of the new tools they have available. For instance, LID-OFF is a compelling model of the BBC Micro itself, showing data flows and operating system actions; it can even run programs! £12.95 is the price of software and notes alone.

This course, in 1986, is only one step away from providing formal educational qualifications within an environment of what I call CAP, Computer Assisted Freedom. You can now buy (or borrow) the pack; study it where, when and how you like; and enter for the assessment across a computer keyboard. Get enough questions right and a City and Guilds certificate almost pops out of your printer. What is that one missing step I mentioned? It is the fact that one can't attempt the test at home or at work through Prestel. Surely that would be easy enough to arrange?



LOGO in control

by Celia Hoyles and Rosamund Sutherland



Working for the last three years in secondary mathematics has given us insights into the potential of using the programming language Logo to bridge the gap between a concrete and abstract approach to learning mathematics. When Richard Bignal (Advisory Unit for Computer based Education, Hatfield) first demonstrated to us the possibilities of adding several new procedures to Logo in order to control a motor we were impressed with the simplicity of the idea. In principle it was possible to control anything from an electric train set to an intelligent robot.

Programming in a language like Logo is a mathematical activity but by changing the context of the activity from say turtle graphics design to running a washing machine we could bring a rich new perspective to the same powerful mathematical ideas. The change in context is also likely to throw up different types of programming projects which are then likely to provoke different strategies of learning.

So we decided to experiment with Logo and Logo! However, as self confessed technophobes the idea of putting together a Logo model let alone a gear, pulleys, transmission systems and differentials was very daunting. We needed some expert advice and the obvious way forward was to find a group of children who did not share our fears. Our role was to get together all the equipment, to use our knowledge of how children learn Logo to structure the session and then to stand back and watch with amazement as the children literally took over.

In order to control Logo models you need an interface box to pass messages between the computer and the model. The interface translates binary information from the computer into voltages which can be used, for example, to operate motors, light bulbs or buzzers. It can also receive inputs from sensors, such as on/off, light or pressure sensitive switches. Taking advice from our colleague, Hilary Pitts, we decided to use a Deltronics buffer box.

With the buffer box connected to the computer and the control Logo primitives loaded we were ready to begin. Abbie (aged 11) and Rebecca (aged seven) are two of the children we worked with. When we introduced them to Logo and Logo they had only had one previous turtle graphics Logo session. Abbie describes her first experience: "First me and my sister Beckie made a model of a car out of Lego... there was a motor with an elastic band connecting it to the wheels... we fixed some wires to the computer and made it go backwards and forwards." (The Deltronics interface box allows current to the motors to be reversed so that the motor can run both backwards and forwards.) They soon discovered that they needed a simple little procedure to turn on the motor wait a while and then turn it off:

```
TO KELLY
  TURNON [0 1]
  WAIT 20
  TURNOFF [0 1]
  END
```

(the commands TURNON and TURNOFF literally turn on and turn off the output from the interface box). As Abbie explains: "We kept on having to change the WAIT number in the program so instead we changed the program to

```
TO KELLY:NUM
  TURNON [0 2]
  WAIT:NUM
  TURNOFF [0 2]
  END
```

so that when we typed KELLY we had to type another thing... a number that was how long it would go on for... then after we had done that a few times we decided that we wanted it to turn left and right but to do that it would have to have another motor so one motor could control one wheel to go left and the other to go right." (An idea which was new for them.) They were design problems with their Logo model as Beckie explains: "It sort of worked but it kept crashing and breaking!" In their next session they de-

signed a new more robust car and successfully controlled it to go left, right, forwards and backwards.

Seven year old Tom spent most of the first session building a Lego model. He obviously enjoyed himself: "The most interesting thing was making a model and running it off the computer because I could write programs to make the model do different things." He brought along a sophisticated looking car to the second session with one motor driving the front wheels and one motor driving the steering. With some help from one of the other children he discovered that he needed to gear down the front wheel drive motor (he used a Lego Technic gear block to do this). He was then able to write a simple procedure to steer the car while it was moving forward.

When we first met Jonathan (aged 10) he was a committed BASIC programming addict who very much looked down upon Logo as "just drawing!" During his first session of Logo we gave him a box of technical Lego. He very quickly built a model, ran it and then experimented with a pressure pad switch and a light sensitive sensor. He wrote a procedure which used the following logic sequence... If the light sensor says that there is not enough light and I am sitting on the pressure pad then make the light flash.

Andrew (aged eleven) was the only one of the children who had previously tried out control Logo at home. He had already built a Logo controlled Lego lorry which he explained "can be commanded in much the same way as a turtle is commanded with my four programs LEFT, RIGHT, FORWARD and BACK". These procedures were all similar in form to KELLY. He also added lights to the model and modified the RIGHT procedure so that "When the model moves right, the right blinker will flash on". During the second control session Andrew and Jonathan worked together and as Andrew explained "Jonathan thought of the idea of adding a bumper switch on the front of the model... we couldn't find the switch we needed so we used a light sensor instead..." They wrote a procedure BUMPER

```
TO BUMPER
  TURNON [0 1 2 3]
  IF EQUAL? STATE 0 [TURNON [0 1 2 3] RIGHT 330]
  BUMPER
  END
```

This procedure is explained by Jonathan "As you can see BUMPER is programmed to allow the model to go forward until it gets near enough a wall that there is not enough light to set off the light sensor and when this happens it turns right and tests again... if it gets enough light it will go forward... if not it will turn right and so on until it detects light..."

Jonathan was obviously inspired by this session because he went home and built a Fischer Technic pickup truck which was similar in design to the lorry but with a fork lift mechanism added on the front. At the next session he wrote a procedure to make the fork lift go up and down and was also adding a light sensor to the front of the fork lift which would detect an object.

What have we learned from these three sessions? The programming constructs used by the children appear to be different from those used in the initial stages of turtle graphics programming. It becomes more necessary at a very early stage to use ideas like variable input, tail recursion and conditional statements. It is also a natural way to introduce lists. As long as the context is motivating for the children they will experiment with the ideas. We would like to see children having the freedom to test the application of Logo which most suits their own interests.

We hope to start working in a primary or middle school in September to analyse more carefully how this sort of activity can be extended and then used in other contexts. We need to reflect on what structures the children spontaneously use so that the teacher can help to draw these out and make them more explicit. Is it utopian to hope that the departmentalized secondary school curriculum will not stand in the way of further development? In a technological age we need children who can make the links between sophisticated mechanisms and the mathematical processes which control them.

Celia Hoyles and Rosamund Sutherland work at the LOGO Maths Project based at the University of London Institute of Education.

Chicken wire, gas piping and tomato tins

These were the basic ingredients of Clifton College's dish aerial.
Nick Baker reports on the school's satellite project

There is virtually no computer studies on the timetable at Clifton College, Boys' at the Bristol public school who want to get involved with computer technology do so in their own time. Concerned to lift his pupils' eyes above the self-contained "box" of the BBC, and to look further than the writing of game software, Chris Gardiner, maths teacher and teacher in charge of the school's technical activities centre started looking at satellite technology. Might this be a useful and challenging way of applying the mostly self-taught skills of his computer enthusiasts?

Around a year later, the answer seems to be a resounding "yes". With the technical advice of ex-electronics engineer Nicholas Hall (who is a keen radio amateur as well as a Church of England ordinand) there developed at Clifton a project involving electronics, metalwork and geography as well as computers.

In essence, the object was to receive, decode, store, interpret and generally manipulate satellite pictures taken by the European Space Agency's Meteosat 11. This was to be done using as much "home grown" technology as possible, converting the geostationary (ie staying in one place above the earth) satellite's analog radio output to a digital signal which would be "readable" on the BBC computer.

The vital components were a dish aerial, a preamp to boost the signal, a down converter to adapt its frequency, a VHF receiver and the appropriate decoding hardware and software. Also needed was an accessible roof with an uninterrupted "view" of Meteosat as it hovers 22,000 miles above the Green-

wich meridian.

"There's a lot of mystery surrounding this dish business", says Nicholas Hall. In fact, a perfectly adequate self assembly dish kit, aimed at the amateur market, can be had for as little as £25, and 15-year-old Oliver Seal's contribution to the Clifton project is a promising dish prototype made from chicken wire, gas piping and tomato tins. At the moment, the project is receiving Meteosat on a four foot dish (whose preamp is unprocessed weatherproofed with Sainsbury's plastic carrier bags) donated by Radio Masts of Northampton.

The project's decoding electronics hardware was devised by David Belber, then in his third year at the school. It was by no means an easy task, calling as it did for a system which would adequately cope with signals from two sources or even a telephone line. It's hoped that the same will be able to digitize signals from other weather satellites, notably NOAA 2.

However, NOAA 2, unlike Meteosat, is not geostationary. Its orbit needs careful tracking by a moving beam antenna. Fourteen-year-old Rupert Witherough is putting finishing touches to a system which will control, again via a BBC, the movements of Clifton's beam antenna, shortly to take its place up a pole on the technical activity centre's roof.

At the moment, though, Clifton is only receiving from Meteosat. What you see on the screen are the pictures taken every four minutes, each of a different division of the earth as Meteosat sees it, with a shot of the British Isles every half hour. These

surprisingly clear pictures are either infra-red, to show the earth's temperature, or visible, to show its cloud formation and direction. Much of the software is written by Nicholas Hall himself, and allows users to "zoom in", to compress pictures, or, using the colour palette, to "thin out" layers of cloud. Oddly enough, the cloud cover shots are most effective on a black or green screen.

Meanwhile, pupils have been busily writing extra software to improve performance. For example, sixth former Nick Bolner has written graphics programs to "enhance" the clarity of coastal outlines and to increase the colour adaptability - so the land can be green and the sea blue, should you wish. He's currently working on software to eradicate rogue pixels which are the results of slightly imperfect signals. These individual rogue pixels could, for example, suggest that it was cloudy in Caterham while the rest of the British Isles was having a heat-wave, all because of a "noisy" tape.

It's worth remembering that autotape signals can be used in place of "live" signals for those interested in simulating receiving satellite pictures without going to the trouble of erecting a dish. For those who do, and want a 24 hour Meteosat receiving station, other pupils have come up with a program allowing the whole system to work round the clock, locking in to Meteosat's transmission timetable, as well as an automatic link option allowing data to be passed to a second BBC for later processing and storage at the user's leisure.

Although the project has received

some outside backing, both Chris Gardiner and Nicholas Hall stress that expense needn't be a problem. Hall estimates that the shopping list for a self assembly system could be as little as £200, given the assistance of some one "handy with electronics". A more "up market" version, with ready made components, that would only need linking together, would cost around £500-£600.

The boys who are working on the final leg of the project agree that the programming skills developed for the project might not necessarily stand them in good stead in the "real" computer world. Their increased

knowledge of space and radio technology might well though, and the teamwork involved speaks for itself. Now the team is looking forward to making their work - electronics, software and all - available on a non profit making basis to the educational world at large. Meanwhile, if all you want is a "play-back" disc to see what the world looks like from 22,000 miles up, Clifton will happily oblige.

Details of the Clifton Satellite Project are available to schools and colleges sending stamped addressed envelopes to Technical Activities Centre, Clifton College, Bristol, BS8 3JH.

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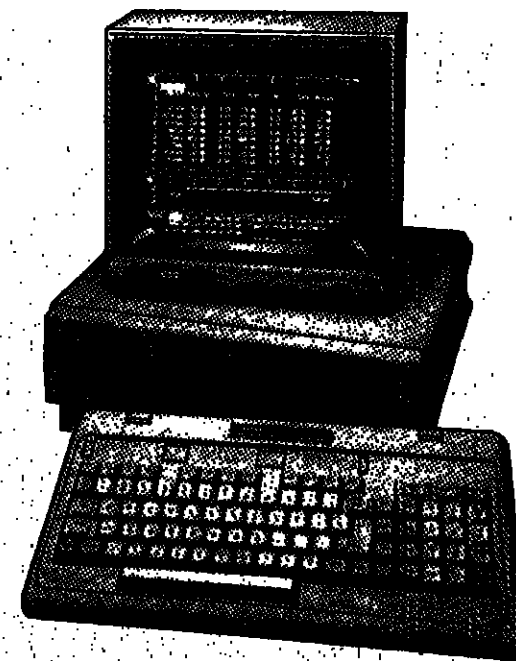
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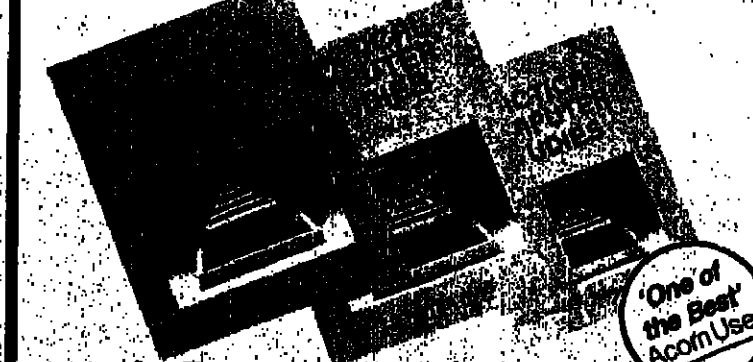
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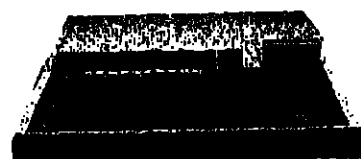
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Master key?

Alan Hinder takes a look at the new Master Series of computers from Acorn



longer have to delve into the computer to change ROMs when you need to use a different language. The cartridges provided are similar to those used on one of the extensions to the Acorn ELECTRON. Indeed the only cartridge I have used so far is Acornsoft LOGO for the ELECTRON.

right of the circuit board is the provision for three internal sideways ROMs - two of 128/256K and one of 128K ROM capability. The board also has provision for the connection of an internal MODEM. An ECONET socket is provided although the ECONET circuitry is extra. The upgrade to ECONET is a very simple push fit connection board.

The memory configuration gives you 64K of normal user RAM, 64K of sideways RAM and 100 bytes for other purposes. The ROM supplied with the computer is quite impressive. It contains the operating system, terminal communication software, BBC BASIC, an on-screen editor, the VIEW-SHEET spreadsheet program, the Advanced Disc Filing System and the old 1770 Disc Filing System.

One of the interesting features of the computer is the battery backed CMOS RAM. This enables you to set the start-up configuration of the computer. You can set up which filing system you want, the key repeat rates, the character ignored by the printer, whether the speaker volume is loud or soft, the language present when you switch on the computer and many other characteristics. There is also a real time clock which is installed and running when you get the computer.

The operating system has a number of new commands but my main concern was that all of the old commands worked. I found this to be the case. The new commands are all to do with the extra functions available on this computer, eg STATUS will tell you all of the configuration options.

The BBC BASIC provided is version 4. Did this indicate changes to the way BASIC operates? I have not found this to be so and all of the programs that we provide at AUCBE will run on this computer from the point of view of the BASIC language. Some programs have had to be modified due to other considerations - see later.

There are a couple of extra commands available to do with editing programs. The main command is EDIT which takes you into the on-screen editor. This gives you a word-processor approach to editing programs. The programmer has the ability to search, replace and insert characters etc. This is very useful and precludes the need for an extra utilities chip to provide these functions.

There is one important difference in the way the system functions which has to do with the way the program tries to shut down all open files. Under the old system all files were closed and retained their correct length on the disc. Under the new system shutting down all files at once (CLOSE) results in all the files being given a length of 16k - a very quick way to fill up a disc.

However, if a program author has shut down only the files that were specified on the disc the length on the disc is recorded correctly. This difference is not the fault of the BASIC interpreter but of the operating system since the same thing happens when writing a machine code program independent of BASIC.

The wordprocessor provided is VIEW 3 - indeed this article is written using the VIEW 3 provided with the Master 128. VIEW is a very powerful word-processor - very close to stand alone wordprocessing systems. The provision of an inbuilt wordprocessor is likely to hit the sales of many third party wordprocessors unless they have something significantly different to offer.

The spreadsheet provided is VIEW-SHEET version 1.0. This has not been around for as long as some of the other spreadsheets and I had not used it before running it on this computer. However from a very cursory glance it seems very easy to use.

The two disc filing systems provided give variety to the way in which you can use the computer. By far the better of the two (the advanced disc filing system - ADFS) and the disc filing system - DFS) is the ADFS. This allows you to format a 5 1/4 inch sided 400 track disc to contain 160k as opposed to 100k using the DFS. You can also have almost as many files as you like on the disc. The DFS allowed a maximum

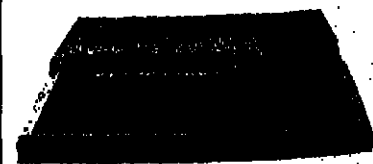
of 31 files no matter whether you were using 40 or 80 track discs. Indeed the Welcome disc provided contains 56 files formatted on 40 track under ADFS. The directory structure is hierarchical and users of ECONET will be familiar with this method of accessing programs. It does take a bit of getting used to and most commercial software will not run under this system. I would suggest that all educational users of this computer initialize the system to DFS and BASIC so that it looks like the old BBC computer. Should a new piece of software require the ADFS it will soon let you know.

The system comes with both a Welcome disc (dual 40/80 track format) and a Welcome cassette. One hopes that ALL educational users will be in the position to throw away the cassette! The Welcome disc which is in ADFS format, goes through the usual "what this system can do" suite of programs. However it does not take nearly as long to get through as the old Welcome disc and the software is a bit more interesting. Also provided on the disc are a number of utilities for formatting, backup, copying directories, copying between filing systems etc. For those who find it hard to get grips with the ADFS there is an ADFS tutor program.

Also on the Welcome disc is an icon based control panel which will enable you to easily set the start-up options. The manual provided with the system is very brief in its description of BASIC, VIEW and VIEW-SHEET. It's enough to get the new user into using the system but nowhere near enough to give the expert status. However both VIEW and VIEW-SHEET manuals are available separately. There is also a two part reference guide published separately - with part 2 being published before part 1.

Supplied with the computer are two reference cards - one for VIEW and one for VIEW-SHEET. Also a function key strip for VIEW, VIEW-SHEET, the editor and the terminal software - not all on one side of the strip. There is very little information about the terminal software in the Welcome Guide - only half a page - so I can make no comments about its usefulness other than to say that it is supposed to provide the facilities necessary to use the computer as either a local or remote terminal to other computer systems.

Many computers are sold on their ability to produce easy to use, fast graphics. The graphics on the Master 128 are certainly faster than they were on the old BBC computer. You also have some extra facilities which were referred to in the old computer's manual as being "reserved for future expansion". These include variable dot to space ratios when drawing dotted lines, screen scroll in any direction, clear block of text window, rectangle plotting, parallelogram plotting, flood fill, circle plotting, and



plotting, rectangle copying, ellipse plotting, and a few others. There are also a number of new colours available through the use of patterning. These are dark grey, grey, light grey, red-orange, orange, yellow-orange, cream, pink, and yellow-green. The availability of each of these colours depends on the screen mode.

The system comes with four banks of 16k sideways RAM. These can be configured as separate sideways RAM "slots" or as a continuous 64k data storage area. With the BBC B PLUS 128 model version of BASIC which used all of the 64k sideways RAM as memory, of course. This will run on the Master 128 but is not supplied with the system. The Welcome Guide refers to it being available from your dealer. The sideways RAM does pose a problem for third party suppliers of sideways RAM based software. At AUCBE we supply two pieces of software on ROM - QUEST (the information handling system) and ALPHA (the language processor). Both have the ROM image sources of these two programs. I loaded them both into separate sideways RAM slots and both worked perfectly first time. One behaved as if you had actually plugged the chips into the computer.

Mouse-driven Gem software

Master key continued

There are no facilities provided with the system to save sideways ROM images to disc but there are many pieces of software around which will do this. This is bound to lead to even more software piracy since now you do not even need a chip copying machine to create your own sideways ROMs. Many manufacturers are now putting protection mechanisms inside their ROMs to prevent you being able to use a sideways RAM image. A simple but very effective method is to write randomly to the ROM. This has no effect on the legal ROM but will destroy the software when it is residing in sideways RAM.

Some software houses are now willing to give licences to users who wish to purchase sideways RAM images of ROM based software. Indeed, when using an ECONET this is probably the most cost effective way of providing ROM based software to every terminal on the network.

How compatible is this machine with the old BBC model B? Does all of the existing software run on this new machine or will new versions have to be provided? These are probably the most important questions as far as third party software houses and educational institutions are concerned. I think the answer is very simple. If the software providers have written their software within the rules laid down by Acorn many years ago then there should be no problems.

Those who have disobeyed the rules may get away with it, depending on what they have done and how naughty they were. Really evil software will dip into the BASIC ROM in order to use some of its routines. This kind of software has no hope of working and will need to be upgraded.

Software that dips into certain memory pages used by the operating system will probably work, since, as far as I can tell nothing has moved. The major difference is in the location of the soft key buffer, the function key buffer and the PAGE boundaries. PAGE (ie the bottom of the area where you are allowed to place your own programs) is now at E00 as with the old cassette system. The space that both the disc and ECONET filing systems use for working is now elsewhere in the computer, away from the user. As long as the author has controlled the PAGE boundary himself and not made assumptions about where it should be, there should be no problems.

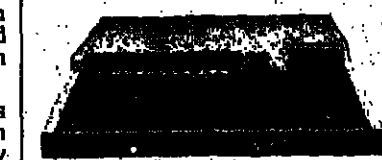
All the keys on the keyboard can now be re-defined and so this takes much more than the 256 bytes originally allocated. Also the function key definitions can be very much longer, also meaning that they will not fit in the 256 bytes previously reserved for them. This is a big improvement.

have been used by many software writers to store bits of data or machine code. This will not be a problem and software which does this will still work since the space that they used to occupy is still there. However, it has been re-allocated as ECONET work-space and so the software will run on a stand alone machine but not over the ECONET. Any software which loads function key definitions or user defined characters directly into memory will find that their function keys and user defined characters have not been set up at all.

In general I suspect that most software will run without modification but purchasers of software must now verify that it will run on BOTH the old BBC model B and the new Master 128.

The Master ET is a version of the above computer specifically aimed at the ECONET local area network. It is a lot cheaper than the Master 128 since it does not have any of the ports such as the user port, analogue port, tube etc. You only get the composite video output, RGB output and network connector. There is an option to fit a parallel printer port.

The memory has the same organisation as the Master 128 with the exception that you do not get VIEW, VIEW-SHEET, EDIT or the terminal



software. Other than that it is as described above. However, because of the re-allocation of certain areas of memory as described above certain pieces of software may not work across the network on this machine when they did work across the network on the old machine.

Unless programmed specifically for speed, like ECONET QUESTN, the old BBC/ECONET computer was very slow in transferring data across the network. This machine is very much faster due to a 4k internal buffer. Indeed, when I compared the speed with that of reading the same file using a disc drive it was actually faster. Options such as station number, printer server and file server are set up using the configuration option.

The Master 512 is an upgrade to the Master 128. It contains an 80186 16 bit processor, 512K of RAM and ROM of up to 128K. The system runs Digital Research's DOS3+ system, which provides compatibility with MSDOS 2.1 and CPM 86. You also get the GEM (Graphics Environment, Mainframe) collection of software.

desk top (an icon-driven front end which includes a calculator and a diary), GEM-Write (a wordprocessor aimed at business use) and GEM-Paint (a graphics package). All of the GEM based software is mouse-driven and a mouse is provided with the system. You also get six manuals to read. The GEM software is provided on disc.

The system purports to run MSDOS based software. At AUCBE we are currently writing software to run under MSDOS (these programs run quite happily on both RM Nimbus and IBM PC). I tried one of our pieces of software (QUEST16, what else!) on the Master 512 and was surprised to find that it worked first time with two trivial discrepancies. I say "surprised" as I can never believe in true software portability between systems. However, the results were very pleasing. The two differences were that the front screen contained a few graphics characters I did not want and the COPY key did not work as I expected. Not insurmountable problems, but I thought that it would have been a good idea for the COPY key to emulate the IBM and Nimbus keyboard INSERT key. Of course QUEST16 is not a graphics program. Writing portable graphics based software is not so easy and you cannot expect all Nimbus based software to run on the Master 512.

My use of the system has been limited to that described in the previous paragraph. For those who have a Master 128 the addition of the 512 co-processor may well be an economic upgrade to 16 bit. However, think carefully before buying this machine as your 16 bit computer. Do look around at what else is available and buy the machine that can provide you with the software you need to use in your educational environment.

One other point about the Master 512: once you have installed the 512 card you still have your original computer. You invoke the 512 from the keyboard or set it to come up first by changing the start-up option. You still have access to all the normal facilities provided by the BBC computer.

The Master Turbo is essentially the Master 128 with a 65C102 8 bit CMOS processor inside. It is an upgrade to the basic Master 128 which runs 50 per cent faster. It is the best way to supply an ECONET file server. At the time of writing I have not used one of these systems.

The Master Scientific is once again a Master 128 but with an additional 32016 32 bit co-processor. It has 512k bytes of RAM and 16k bytes of ROM. It supports the PANDORA operating system. The software provided on disc is the PANOS operating system (in-

cluding editor, linker and utilities), FORTRAN 77, ISO PASCAL, C, BASIC 4, 32000 series macro assembler and library support for the three languages mentioned. Documentation is also provided for all of the languages. Acorn advertising states that programs developed on the Master scientific will run unchanged on mainframe machines. I have not had access to one of these machines.

On the whole the most useful of the above machines will be the foundation machine - the Master 128. It maintains compatibility with the old range of BBC computers, with the exceptions listed above. The exceptions themselves are fairly trivial. However you must be aware that some third party software has broken many of the rules and may cause you trouble. Indeed we are not entirely innocent at AUCBE. When testing all of our software on the Master 128, I had to make changes to three of our major pieces of software in order to make them work correctly.

For your information, the changes were to QMAP, STARSET and CONTROL LOGO (which works with all the four major chip based LOGOs on the Master 128). However this only took about 30 minutes work so the changes were fairly trivial. Other software houses may not be so lucky.

The Master Scientific will be of little use in schools but may find some use in colleges or universities. The ET will be ideal for adding to existing networks being cheaper than the ECONET - only BBC model B. The only ECONET file server you should now go for is the Master Turbo since this will also be cheaper than buying a Master 128 and a 6502 Second Processor. The Master 512 needs more careful consideration since you will need to look around at what else is on offer from other manufacturers.

From the cost point of view the educational user should expect to pay no more for the Master 128 than they would have paid for the BBC B Plus 128 (somewhere between £360 and £400). But do remember that you are also getting £105 worth of word-processing and spreadsheet software thrown in. It is also worth mentioning here that the software element of the computer comes under the DIT Software in Schools scheme. Taking advantage of this scheme should reduce the cost even further. Should you wish to find out more about the DIT Software in Schools Scheme then contact your local Computer Education Advisory Service.

* Alan Hinder works at the Advisory Unit for Computer Based Education, Hatfield, Herts, which is where the computers were tested.

Designer's box

Introduction to Systems Design 1
By John Eaden, Alan Giles and Steve Rogers

CRAC Publications published by Hobsons.

This package consists of one 25-page teachers' guide; 10 21-page students' booklets; 10 42-page "data and catalogue" booklets; 10 44-page "how and why ideas" booklets. This is complex, not something you'll be able to dump at the front of a class and have running within a few minutes.

The material is apparently designed to be part of microelectronics courses in the 13-16 age range; it's claimed that it's been tested and shown suitable for students "of all abilities in secondary schools and colleges".

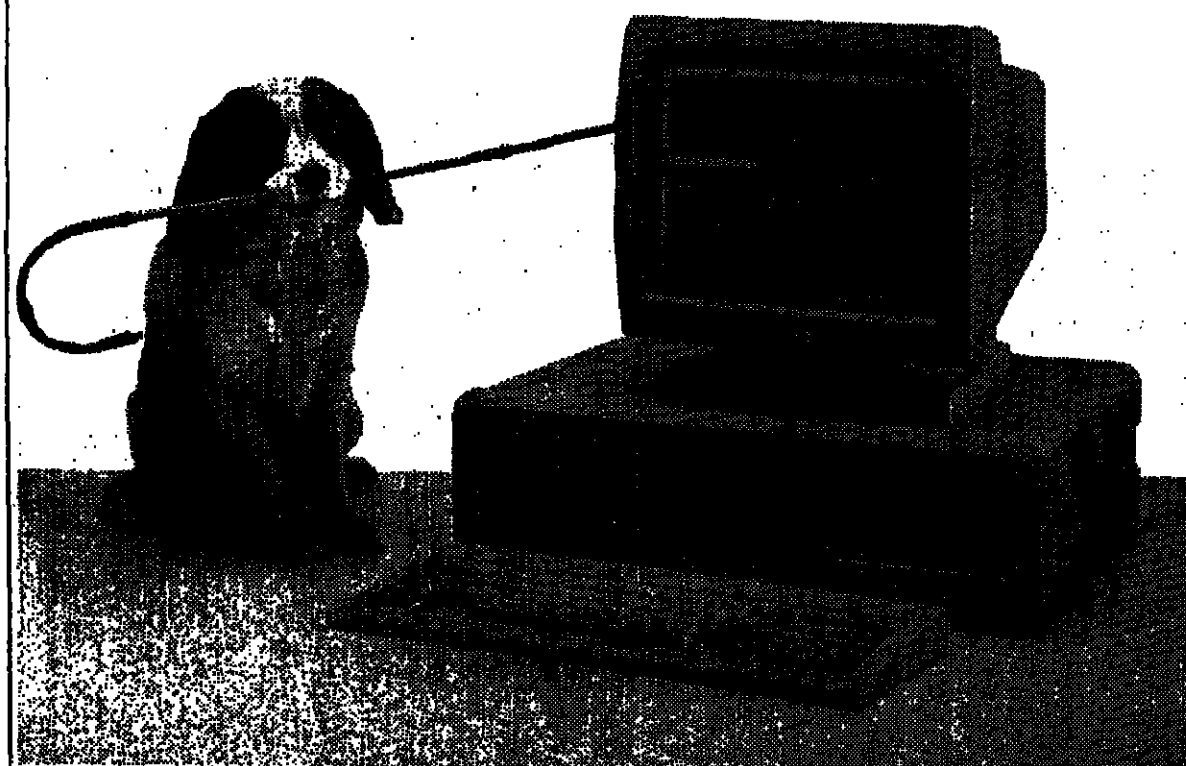
True field-testing of material like this must involve attempts to administer it by a completely unskilled teacher to a completely unmotivated class. It is extremely hard to imagine that even an experienced teacher could put this material across, however excellent it may be, without a great deal of preparation and perhaps even in-service training.

The material comes with an impressive provenance: MEP LOGO splashes each front cover, and the University of Salford and De La Salle College of Higher Education (Jostle for recognition as well). The objectives of the approximately 15-hour course relate to electronics, problem solving, and communications. The course itself has three parts and involves a large number of theoretical and practical activities. There is a kit, but the authors don't tell us the price.

There's absolutely no doubt at all that, properly used, this little course would be of immense value in a large number of contexts in secondary schools and FE. The contexts range from basic information technology right through to advanced electronics and engineering. Unfortunately there's little indication as to how one could justify including it in the lower levels, particularly in view of its great cost and the need for detailed teacher familiarization.

Eric Deeson

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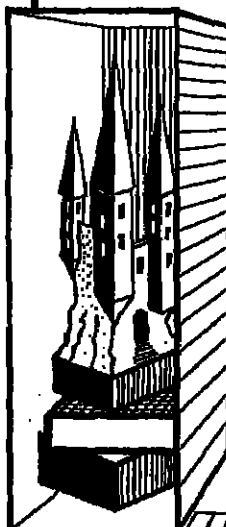
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Education must fulfil the needs of industry - this seems an article of faith with the present Government. But as new technology changes the way business operates, do managers really know what they want? British commerce and industry is notorious for its own lack of investment in new technology training and there is now increasing evidence that companies have little idea of what shape this training should take. The City and Guilds examining board finds that education leads industry when it comes to the provision of information technology courses. "Education develops the courses, leads the way and leads the demand," says Peter Neat, information officer with the City and Guilds examining board.

Training officers in companies complain of a skill shortage among new recruits, says Neat, but there is little research which defines exactly where that shortage lies. City and Guilds is developing courses to teach information technology at all levels and the committees which decide on syllabuses contain representatives from both education and industry. "But the problem," says Neat "is getting people from the employers' side to define their needs - or even to sit on a committee in the first place."

Such problems, argues Neat, are part and parcel of the mistakes industry is making as it rushes to computerize. "Information technology has been publicized as being such a massive revolution that companies feel that they must get in on it. But this demand isn't knowledgeable - they don't know what they should get. The computer supplier is only interested in delivering a product and getting out of the door. People need to be educated in how to evaluate computer hardware and software."

One heavily computerized company which is looking to colleges of further education for help in preparing its staff for work is Thomson, the travel agent. However the courses, run under the Government-sponsored Youth Training Scheme, are beset with problems.

Peter King, Thomson's personnel officer, says the company expects trainees to acquire keyboard skills,



But does industry know what it wants in the way of training.
Christine Tongue reports

numeracy and communications skills and computer literacy, but paramount are social skills. "The stress for future clerical workers must be on the ability to get on with a team of people and have a good social attitude," says King. Problems have occurred, says King, because Thomson trainees have resented the college environment. "Being in college," says King "is like being in school - and the trainees were

glad to be out of school."

The net result has been rebellious students, the majority of whom refuse to take work in college seriously.

However many colleges claim that much of the trouble arises from the inability of YTS managing agents to understand the real needs of trainees. "Student attitudes very much depend on the attitude of their company," says one college lecturer. "If the company views sending its trainees to college like sending kids to school, then the trainees will act like 'kids'."

A recent report, *The Design Needs of Industry*, from the Business and Technician Education Council points out that a serious drawback in colleges' efforts to provide appropriate training for industry is a lack of the finance necessary to buy computer hardware.

But a more serious failing, according to the report, is the datedness of college teaching. A majority of companies surveyed by the report felt that most teachers were isolated from technological developments and consequently their teaching was out of date. It's no accident that video is proving the most fruitful common ground for education and industry. Video can show the information technology in action and in its commercial context, in a way unparalleled by the printed word or by the classroom-bound BBC micro.

Confusion over what industry wants of education and what education can provide is compounded by the lack of a single mediating body. At the moment the Department of Trade and Industry, the Manpower Services Commission and the Department of Education and Science all have a finger in the pie.

According to City and Guilds' Peter Neat, there's an urgent need for a single quango to research what's needed in information technology education. And this should be backed by Government spending to the tune of £100 million on developing this research, argues Neat. "The way things are it's no wonder both teachers and training officers are confused." *The Design Needs of Industry* is available from B/TBC, Central House, Upper Woburn Place, London WC1H 0HH, telephone 01 388 3288.

Speedy tortoise

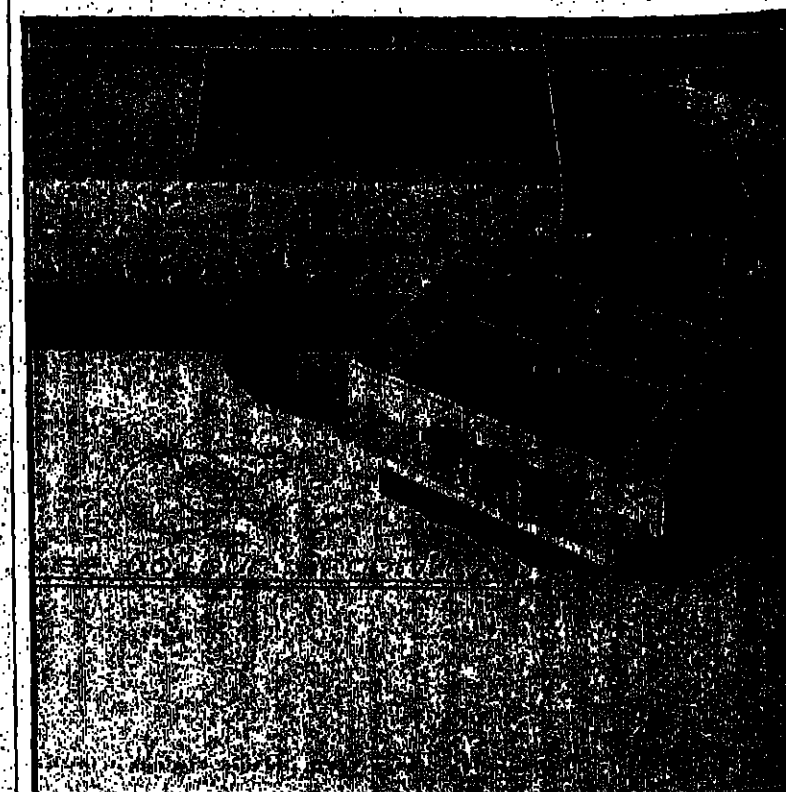
Audrey Laski reviews the Penman

move or to emit little repeated beeps of distress which cease only when it is switched off; this involves re-initializing and homing it when you switch on again, which is frustrating in the middle of a piece of work.

Penman's arc command requires curious geometric insight; it seems wasteful not to use the geometric ideas that maths lessons encourage; again, because of the way the pens are hidden, it is not easy to see whether you are starting from the desired place.

Copying a curve from a sketch into the computer, although feasible given appropriate software, would require coordination of eye and wrist that does not come naturally. Many of these difficulties will probably evaporate with experience - one should never expect to be able to manage all the facilities of a new piece of hardware or software at once - but a fuller manual, with more sensitivity to the needs of the naive user, would have helped.

I find it hard to believe that I shall ever be able to program it to execute the jolly - and jolly complicated - graphics the demonstration plots produce, but I'm sure I shall move on from my hesitant and random curves. If it's only for the lettering facility, programmed in and requiring no effort other than deciding on size and whether to have upright or italic, I already know that I'm not going to want to do without this accomplished little robot. The Parent Teacher Association looking for a useful add-on to a school micro should certainly consider this.



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Just how useful are computers for music education? Is the hardware capable of supporting this area of application in terms of sound quality and musical control? To what extent is effective software available for the particular needs of music education?

During the eighteen months since the establishment of the national Microtechnology Unit in the Music Education Centre at the University of Reading School of Education, such questions have been very frequently asked. Over this period of time, the staff of the Unit have been able to considerably refine and clarify the answers to these questions through frequent discussions with children, teachers, advisers, HMI and the staff of the Music Education Centre, and through the Unit's three main national areas of work which are: the development of an appropriate information and resource base; a vigorous programme of in-service training courses for music teachers and advisers; and the development of new materials involving microtechnology for music education, both at the Unit and through consultation with commercial hardware and software producers.

The recent HMI report "Music from 5 to 16" (Curriculum Matters 4 - HMSO) includes a computer as one of the "principal needs" of a secondary school music department, which confirms that computers are being taken seriously in this field of work. However, the report does not specifically indicate how the computer is to be used.

This article, in sharing some of the findings and conclusions of the Microtechnology Unit, will hopefully go some way to help clarify the current situation.

It is very important to firmly establish a music education viewpoint on the use of computers, rather than a computing-viewpoint on their applications for music education. This means considering primarily the three main music education activities of Listening, Composing and Performing, which are of course inseparably interlinked. The underlying and essential ingredients of all musical activities is listening, either internally to sounds generated in one's head, or the more readily identified listening to external sounds. These listening activities should involve creating, analysing, modifying, selecting, combining or otherwise manipulating sounds of a high quality and wide tonal range.

Of course it is also essential that the sound provision of such a system can be controlled musically rather than mathematically, analytically, logically or by other artificially coded or programmed means. This will generally require a means of musical input, commonly a piano type keyboard, (or perhaps a microphone for singing or for use with other instruments), and also software programs which communicate with the user in language appropriate for the music classroom, and offering facilities which support or supplement the music curriculum.



Composing activities require a range of software including sophisticated music processing systems, providing facilities for music entry, combining a number of parts and tone colours and for comprehensive pitch, rhythm, timbre and expression editing, with appropriate supportive use of sound, colour, animation, and graphics or traditional notation. Such a system would allow pupils to create music beyond their physical performance skills; to compose for groups of instruments and experiment with orchestration; to develop an appreciation of performance characteristics through listening to focus separately on concept and skills components; and to develop musical communication skills.

However, it would also support an enormous range of other musical activities including creative exploration of rhythm patterns or melodic phrases; the development of basic musical concepts such as higher/lower, faster/slower, louder/softer, aural analysis of pitch, rhythms, intervals, timbres, expression, and component musical sounds; and elements of musical form. These activities can be undertaken in an exploratory and experienced manner by the pupils, with appropriate use of guidance from the teacher, or can form the basis of a supportive,

illustrative and discussion-provoking medium for group or class teaching sessions.

As well as a comprehensive music processing package, it is very necessary to have a number of much simpler programs for "learning about" composition, where only one or two dimensions of the multi-dimensional composition process are considered, and presented in a clear and concentrated fashion, for example to aid the creation of simple balanced rhythmic phrases, or to enable experiments with orchestrating simple pre-recorded compositions.

Such programs could be designed to be used as part of teacher-guided group or class work; individual or group exploratory work; or through a computer-presented series of assignments selected by the teacher or by the pupils with guidance from the teacher. The key factor for any of these approaches is the need for genuine relevant musical involvement during the use of the program - perhaps including singing, clapping or playing instruments - or perhaps internalizing rhythm, pitch or sounds. It is important to realize that it is often the case that deliberately leaving out one or more musical elements from a computer program, positively stimulates the pupils into active musical work in these areas.

As indicated above, aspects of performance could often be encouraged through the motivation of a computer

explanation and discussion, timing, and the variety of activities to suit the particular class and the particular pupil; things which it is not possible for a computer program to do effectively.

The discussion so far has assumed the availability of a high quality music computer, rather than the "standard" microcomputer. What can be done with these general purpose machines? Of course material can be produced for these computers, but it will be significantly inferior and very limited in many respects. To consider an analogy with computer graphics: a high quality sound facility is like high resolution colour graphics, whereas the standard sound is like low resolution black and white graphics.

Furthermore for creative graphics work, direct manipulative devices such as the mouse, joystick or light-pen are used, and these are analogous to the direct musical controlling devices of keyboard or microphone. Thus with the "standard" microcomputer, one should only be attempting basic preliminary concept work with bold simple features, as any attempt to introduce realistic musical subtleties will almost certainly be unacceptable. Therefore initial work with such things as pitch, rhythm, tempo and simple concepts such as higher/lower could make use of the common microcomputers effectively, but such a system will hardly reproduce or help create a complete piece of music.

What are the available options in

synthesizers such as the Casio CZ101 (£345) capable of playing four timbres simultaneously, and the Casio CZ500 (£900) with eight timbre capability, but still very limited because of the lack of independent volume control for the separate instrumental sounds.

There are also specific music computers being produced, notably the Yamaha CX5M, at about £350, and its soon to be released upgraded version, which contains a built-in high quality eight-channel sound source with good sound variation range and control.

Allied to the sound capabilities of computer systems is the need for a musical input device, as it imposes significant restrictions trying to specify musical notes through the standard typewriter style computer keyboard. Of course linking a synthesizer via MIDI provides both high quality sound source and music keyboard input facilities, as does the Yamaha CX5M Music computer with its attached music keyboard. In terms of specific music keyboard add-on devices, there are a few devices available which connect to "standard" microcomputers using the low quality internal sound chip of the computer. For example, the BBC computer the four-octave ATPL Symphony keyboard at £125 is of this type, although there is some software available to allow the Symphony to use the high quality Music 500 sounds in a limited way.

Hybrid Technology, the designers of



Micros and music

by Colin Wells

program, and indeed the playing of live instruments with high quality computer sound (particularly playing pupil-created material) can add another dimension to classroom group music making. Also, keyboard performance can become an integral part of a planned improvisation or composition when synthesizers or other musical keyboards are linked to computers using sequencing and composition programs, particularly if the keyboard is capable of touch sensitive expression.

Musical activities mentioned above are largely of the "open ended" exploratory, discussing, sharing or creative types, which reflect the current trends in music education, and this approach should be reflected in supporting software on computers.

Of course there are occasions when individual or groups of pupils require practice at some particular skill, or require reinforcement of a musical concept, and the computer can become a highly motivating and patient provider of material for these purposes. However, the use of such programs should be planned as an integral part of a meaningful listening, creative or performing project, under the guidance of the teacher, and not be simply presenting isolated musical elements such as notation, or aural work without relating them to a musical context. While programs can help provide practice or reinforcement, the introduction of new musical ideas, concepts and experiences is much better left to the teacher, as the teacher can tailor such things as level of

hardware and software at present?

Higher quality sounds are now available for computer systems through a variety of means. First, add-on sound boxes, or sound expanders are appearing for a variety of microcomputers. Two notable examples are the Music 500 for the BBC micro and the Music Sales Sound expander for the Commodore 64 micro. The Music 500 which costs £169 provides eight channels of high quality stereo sound, and it can be programmed to produce a vast range of musical timbres and envelope shapes. The Music Sales Sound expander, which is a recent development costing £99, provides 11 channels of extremely good sound complete with flexible sound creation facilities.

The second method of producing higher quality sounds is to link computers to synthesizer keyboards using MIDI (Musical Instrument Digital Interface). MIDI interfaces can now be purchased for many microcomputer systems, and they make available to the computer the range of timbres and sound editing controls of the synthesizer which is connected. However, in most cases, only one connected synthesizer will only produce one timbre or tone colour at a time, although capable of playing say eight different notes simultaneously. So at present this approach does not generally offer comparable facilities to dedicated add-on sound boxes. Using the sound graphics analogy, this is like using high resolution graphics for a monochrome monitor. The situation is beginning to be improved in this respect by the recent introduction of multi-timbral

the Acorn 500 will be releasing a four-octave Music 400 keyboard (at around £130) as a specific add-on for their sound box, and Music Sales have a five-octave keyboard (at £69) for their sound expander.

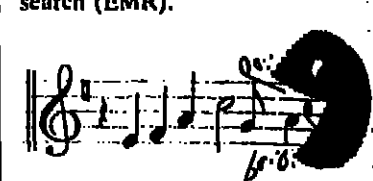
One further add-on device which should be mentioned, which combines a programmable sound source with a five-octave touch sensitive keyboard, is the Clef Computer Music system at around £475, which, to operate, must be connected to a BBC computer.

Of course it is very unwise to select hardware simply by considering its potential capabilities: it is the level of access to these capabilities, provided by the software, which is all important. All the high quality sound systems mentioned above have some form of music processing, composing and editing software, but some are very computer oriented. Perhaps the most comprehensive musically-oriented software system at present is that of the Yamaha CX5M, which has a step time composer program allowing, in particular, access to subtleties of expression and performance through the use of musical terms, symbols and concepts. This microcomputer will soon become even more attractive when a high quality real time composition program is published for it by Digital Music Systems Ltd.

A strong rival to the CX5M is likely to be the Music Sales Sound expander for the Commodore 64, for which some very imaginative and exciting software is being developed in conjunction with a considerable amount of educational consultation and trials.

The Music 500 system software is very powerful, but is more designed for experienced computer programmers with musical interest than "pure musicians".

Software provided for using MIDI is very variable in both facilities and price, but perhaps the most comprehensive set of support software for a range of microcomputers, at a realistic price, is that of Electro-Music Research (EMR).



There is very little software other than these general music processing type packages available for these high quality sound systems as yet because of their relatively recent appearance. There is therefore the dilemma that there are a fair number of programs available on the "standard" microcomputers, many attempting tasks which the hardware is not capable of supporting effectively, whereas the machines that are capable of supporting these activities have a limited number of software packages. This situation, however, is changing rapidly.

Of the many packages for the standard microcomputers, (and in particular the BBC with its large presence in schools) only a few use the limited hardware resources in an effective musical manner, and the following seem to be some of the best in this aspect, (as shown through surveys and comments on many teachers' courses):

- **Audio Discrimination** package by George Self incorporating nine varied programs for individual and group listening activities with opportunities for creative work.
- **Micros and Music** package by the ITMA Collaboration incorporating nine imaginative and creative packages. Programs designed mainly for teacher support.
- **Musical Recorder Tutor** by Music dos Ltd, which uses the computer effectively to support the learning of a graded series of tunes on the recorder, and includes a high quality audio tape to play along with to provide the reward of an exciting musical performance.
- **Peter Beater's Musical Games** by System Software, which includes Musical Rainbow and Musical Jigs for young primary children involving musical concepts and creative opportunities.

In conclusion, these are very exciting times for music education, with high quality computer systems, along with electronic synthesizers and other devices such as drum machines and sequencers, beginning to significantly affect what activities can be undertaken in the music classroom, and the methods by which those activities can be tackled. Provided the current developments are channelled in the right direction, through effective monitoring by music educators, then system will become available with the potential to change music education.

Useful Addresses:
Music Education Centre Microtechnology Unit, University of Reading School of Education, London Road, Reading RG1 5AQ.

Hybrid Technology Ltd (Music 500) Unit 3, Robert Davies Court, Northam Road, Cambridge CB4 1TP.

Music Sales Ltd, 78 Newman Street, London W1P 3LA.

Casio, Unit 6, 1000 North Circular Road, London NW2 7JD.

Yamaha-Kemble Ltd, Mount Avenue, Bletchley, Milton Keynes, Buckinghamshire MK1 1JE.

LVL, Regent House, Lenton Street, Sandiacre, Nottingham NG10 5DQ.

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*Time taken to send 700 word report to 64 stations on the Nimbus Network



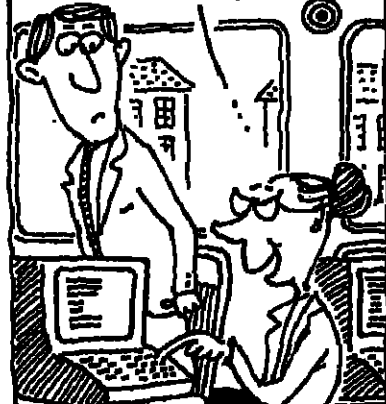
RESEARCH MACHINES MICROCOMPUTER SYSTEMS

Every day Polytechnic lecturer Bob Hallowell drives to work in a double-decker London bus. This isn't an ingenious form of moonlighting, but a new way of spreading the gospel of information technology.

This academic year has seen the setting up of 18 regional Centres of Expertise in IT, funded by the Department of Education and Science's Education Support Grant in consultation with local authorities.

Siting the centre in London was something of a problem, until some-

I meant to take the 73 to Harrow, but this is much more fun!



Life on a double-decker technobus

by Huw Richards

body remembered the ingenious device used by Bedfordshire's craft, design and technology adviser for disseminating IT a few years ago - putting the equipment on a bus.

The centre is known as the Open College Technobus as it operates through the South London Open College, centred on The South Bank Polytechnic. In its blue and white livery it is rapidly becoming a familiar sight on the roads of South London.

Converting and equipping the second-hand London bus, which came into service in January, cost about £65,000. The top deck is arranged as a classroom with a teaching area seating 20 students around a 10 station RML Nimbus computer network. Downstairs is a demonstration and workshop area with a range of systems which can be used to illustrate the educational applications of IT.

The main thrust of the centre's work is towards staff development. On four days a week it is driven from its South Bank Poly garage to one of the Open

College institutions for a day's work - on the Friday it stays at the Poly as the base for an AETI lecturers' training course. "It's much easier for staff to drop in on us when we bring the equipment to them, than to make a special journey to some central point," says Hallowell.

Centre director Graham Rourke comments that through the bus "many more institutions are now able to gain direct access to scarce IT resources."

The bus can be used as a library for software, showing staff new items as soon as the authority gets them, and taking items of highly specialized equipment around the institutions. Some highly expensive items wouldn't get enough use to justify their cost in any one institution, even if they could afford them, but become economic if they are taken around to several.

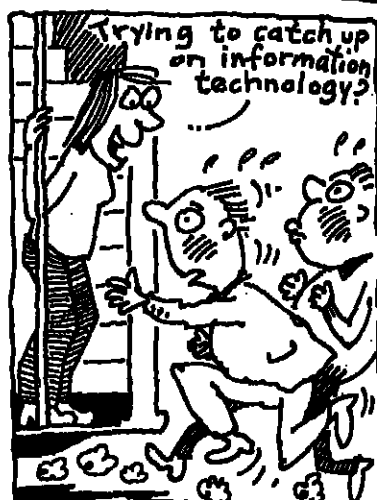
A typical day in the bus's first month of operation took it to the Tulse Hill campus of South London College. Hallowell and Rourke reckon on two sessions - a drop-in period from

10.0am to midday followed by a workshop from 2.0 till 4.0.

In practice it turns into two drop-in sessions: "It's very difficult to take 12 or 15 people out of a college department at a time, they just don't have the resources to do that," says Rourke. So staff drift over in their twos and threes.

It is very much a "getting to know you" session. Most comment is positive, although one tall member of staff complains of lack of headroom and demonstrations are hampered by having to run the computers off a generator rather than mains. One of the pieces of legal knowledge Hallowell has acquired in this job is that you're not allowed to run a power cable across a public right of way.

The morning session introduces staff to the capabilities of the Nimbus, newly purchased by ILEA. Some experiments with its sophisticated and diverse graphics package, others explore its potential for word processing. The afternoon session concentrates on communication skills. Equipment



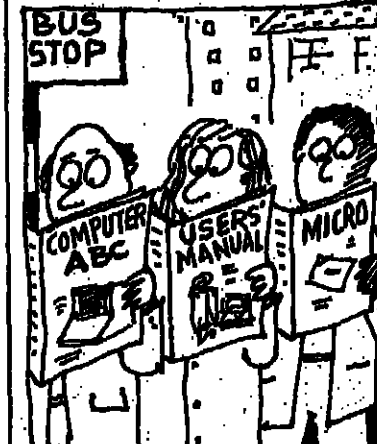
used includes a speech synthesizer unit, a concept keyboard which simplifies the process of giving commands to the computer and a range of BBC software. Training concentrates on using programs rather than writing them.

But there's plenty of interest. Hallowell finds that his role is largely one of counselling: "People tell me, 'My computer doesn't understand me'," he jokes. Rourke suggests that the sheer novelty of having a bus full of computers on site helps attract people in: "People who find a college computer room forbidding will wander in and have a look at the bus - it is extremely approachable."

Dr Richard Marsh, head of Physical Science at SLP, was enthusiastic about the idea after his first sight: "We're still in the early stages. We'll ask staff to tell us what they feel will be useful and to quantify what will benefit us in terms of timing the bus's visit. The great benefit is that you'll get a much greater throughput of people than you would in a permanent centre," he says.

Business and secretarial skills lecturer Yvonne Mackenzie welcomes having the facility on her doorstep: "You see a lot of equipment and ideas you'd otherwise miss - and it helps very much that it comes to you and you can drop over for a time during a working day."

Electronics and Telecommunications senior lecturer John Guy was chiefly interested in the hardware: "We're interested in robotics for a higher certificate microprocessor course. Students write codes to perform control type applications. Finance is the problem with this, advanced robotic equipment is extremely expensive and getting funding makes



purchasing very long drawn-out."

"The expense and the time you take to acquire equipment means a wrong decision can be a disaster for a course. But many local industrial plants have robotic control in production and we want to give our students some relevant experience. I'm keen on the concept of the bus as it gives us the chance to see equipment which no single college could afford."

Dr Marsh says the bus's facilities will clearly come from a wide range of departments, and levels of knowledge ranging from complete beginners through to John Guy's specialists. Responding effectively to this demand is the key to the project's success. Hallowell says: "This project has to be user-driven. We're still getting to know people and finding out their needs."

He points to one pleasant phenomenon already provoked by the bus: "We seem to be a neutral zone where teachers are away from competition between departments and other tensions and actually talk freely together."

Still in its early stages the bus looks to be a valuable and flexible weapon in the DES and ILEA's attempts to bring staff up to date on the possibilities of IT.

Screen writing

Susan Thistlewaite and Linda Candy on wordprocessing

The advent of the electronic information age is a challenge to all teachers including and, perhaps, especially, teachers of language and writing skills.

Computers can be a valuable aid to learning in those lessons, in fact the wordprocessor is probably the most important available technological innovation for writing development and is an undervalued instrument in schools today. The influence of the machine is to encourage a student centred learning. Far from dehumanizing the teaching situation the machine tends to personalize it and enable the development of cooperative group work.

Writing skills are of prime importance and we are convinced by our experience of wordprocessors that this form of technology can be used effectively in the English classroom. At our comprehensive school wordprocessing is an integral part of the English curriculum and a departmental staff facility. They are used as tools for improving writing and are fundamental to our Journalism course.

The best way to make our pupils participants in the use of information technology, is to organize courses in which pupils are taught about what new technology can do to make its use part of classroom activity where pupils use it for their own learning purposes. What better way to understand issues about privacy and coded access to data bank systems than to see the class profiles or marks kept on floppy disk or to select one's own essay from a master diskette.

Two of the recommendations of the APU language monitoring team are that pupils could be helped to improve their writing performance "by being made aware of the place of writing in the process of learning and of the value of note-taking and exploratory drafting and by having opportunities to work collaboratively through the stages of composition and revision."

These aims can be facilitated, even transformed by the integration of wordprocessors into the activities. The use of wordprocessors can change attitudes towards revision, and not just revision of technical details. There is more opportunity to play with ideas, free of the constraints of accuracy, whilst those ideas are in full flow. It is important not to see it as a copying up device but as an electronic "scratch pad" on which ideas can be developed and manipulated.

In our work, we have used groups who can share operative roles: typing in, dictating the story, checking spelling and technical accuracy. These roles can be rotated, and are not seen by us as of primary importance, although the ensuing discussion of language and form is. The group decides, through discussion, the most effective choice of word, phrase, sentence and paragraph order. They work from already created notes, producing a joint piece of work.

After the first draft, the advantages of using the wordprocessor becomes obvious. At this stage in the usual writing process many children see their work as done. With a wordprocessor, however, real writing development begins now with a careful reading and consideration of the text, and re-drafting.

When the work is handwritten this is tedious, and possibly distressing. With the wordprocessor, the text can be printed out, amendments discussed, and then, using simple commands, an altered printed copy produced. Of course an individual can work on a wordprocessor in this way too. However, the disadvantage of this is that the very useful discussion of language is lost. It is also very expensive in terms of machine time.

The wordprocessor's great advantage is that it allows a distinction to be made between presentation and composition. The writing has not been tediously laboured over with a pen, and although hard work may have been done at the keyboard, it is surprising how most children pick up the "hunt and peck" technique; the alterations don't leave the child with a destroyed and messy looking and product. Quite the opposite, in fact, a printed piece acts as an incentive to our students.

The wordprocessor encourages editing and drafting: in fact, editing becomes fun. The first printout is viewed, not as the end product, but as a stage.

It can be taken away and worked on. The "neatness is all" view that some students have is dispelled. Children who find manipulating a pen difficult are liberated and encouraged to see their composition separately from their handwriting.

We have found that students pick up the basic editing commands quickly. With the aid of a MEP grant we have developed a set of materials which guide pupils through a series of writing activities using the wordprocessor to its best advantage. Our students have worked through these cards and now produce the copy and artwork for their own pastes, and edit at ease. Girls especially benefit, because computers are being used away from the overwhelmingly masculine atmosphere of school computer studies, and the home computer style games.

A "low tech" future for writing in schools has been predicted. This is a pessimistic forecast, and one that is out of step with the future work prospects of our pupils. Ray Hammond (TES 25.10.85) says that over 60 per cent of

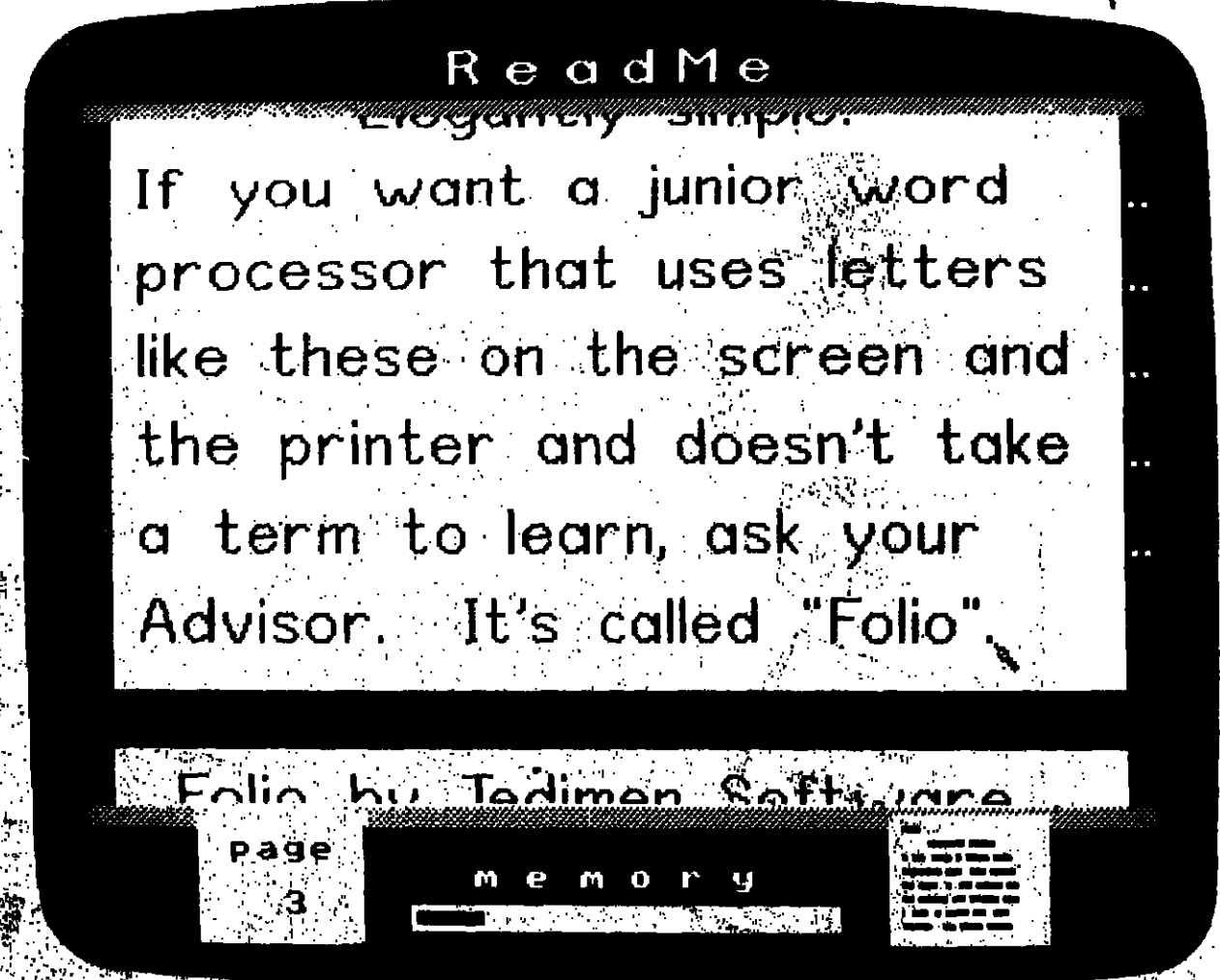
micros sold to industry are used for wordprocessing.

More important to the personal needs of our students is the enhancement of writing skills which the wordprocessor can offer. Our students are entitled to the best means available to enable them to write effectively and with pleasure and purpose. In the same way as science teachers now regard practical work by pupils as essential to a proper experience of science and hence demand laboratories and materials to effect this, we can envisage a future approach to the development of writing which demands the facilities offered by the new technology. However, until there is commitment to innovation scarce resources will remain the province of computer studies, mathematics and other subject areas which are considered the appropriate users of the new technology.

Susan Thistlewaite and Linda Candy teach at Wreake Valley College, Syston, Leicestershire.



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Robotics project

The Microelectronics Education Programme in Wales has launched a pilot robotics project in seven primary schools. Its intention is threefold: integrating various branches of science, introducing control technology in the classroom and, most importantly, fostering pupil-centred activity.

Although tasks are assigned by teachers, it's up to the pupils to decide how the problems will be solved. Children are issued with a micro-computer, an interface, a building kit and a software package. Working to a general brief such as "Make a model using all the pieces issued", each pupil has to decide which kind of model to make (choices range from a mechanical digger to a walking skeleton) as well as the tasks it will be required to perform.

The American Robotix plastic building kit, marketed by Milton Bradley Ltd, comes complete with four motors, moveable wheels and a five-switch control panel. Although similar in some respects to Lego, the Robotix girders are larger and probably easier for small hands to manipulate. Children progress from operating the robots manually with the hand-held switches to computer control.

Both the interface linking the computer to the robot and much of the

movement controlling software has been developed by MEP in Cardiff.

A wide range of robot movements have been incorporated in the accompanying software. For example, robots can simulate their factory counterparts by picking up and lowering objects repeatedly, thereby introducing industrial control technology applications to pupils early on in their school careers.

Similarly, wheeled robots can move backwards and forwards along the classroom floor. Such movements can form the basis of a primary school science course.

Physics topics, such as the effect of friction on speed, and mathematical issues, such as the optimum weight a robot can carry, may be subsequently introduced, while both mathematics and geography are being applied in the gradients tests tested as the robot climbs up and down a series of inclines.

A sensor attached to the robot offers further possibilities. For example, a robot can be made to detect light and to negotiate an obstacle course by avoiding objects placed along its path. Largely as a result of this pilot project, the Robotix kit is now commercially available in the UK.

Iola Smith

EXTRA

Information on tap

Bill Smith on the benefits of databases

The arrival of computers in schools has emphasized, not removed, the dichotomy between teachers who "know about" computing, and those who don't. Yet to any teacher able to switch on electrical appliances, and type (even two-fingered), the computer offers release from recurring drudgery.

The capability of the computer as a wordprocessor, able to accept, manipulate, alter and store text - parents' letters, departmental guidelines, subject notes, question-papers - is recognized even where it is not used. Using the BBC computer as a wordprocessor has alone saved me incalculable time and trouble, and I would no more dream of returning to a typewriter than I would of going back to Stephen's Blue-Black ink powder and the Devil's Own nibs.

Most teachers use a calculator for marks, ordering stock, etc without worrying about how it works. You press the buttons, and up comes the answer. Great!

But how about a calculator that "contains" the names, classes, teachers and assessments of all the pupils in the department? That will arrange these assessments, totalled and percentage, in rank order? That will throw in, as a bonus, the total, mean and standard deviation for the whole group, or any part thereof? That will, before you can get the cap off your pen, after this arrangement to alphabetical order in form classes, for the year?

Or how about a calculator holding title, author, publisher, ISBN and latest (known) price of every book in the department? That will list separately novels, poetry anthologies, plays, short stories... AND, when you want it to, tell you how many more to order for a full class set, AND how much reordering will cost...? And all this without your ever doing a sum!

A computer database is such a calculator, and obviously the database confers its largest bounty on the non-numerate teachers - those who are, ironically, the very ones least likely to touch the computer.

A database is a "computer application" which, like the wordprocessor, can come as a cassette, on disc, or in a "chip" easily plugged into the computer's innards. It contains a program to accept the information you enter as either alphabetical or numerical data, manipulate it as you require, output it in the form you stipulate, and store it for future reference or alteration.

A file is a list of all the information you want to keep on a subject; a record, the information on one item in your file, each piece of information is called a field.

A good database will allow you to:

- stipulate the number and names of fields per record (usually limited, but normally about twenty), and stipulate maximum length per field;
- add new records to your file, or delete from it (eg add books bought in, or delete books withdrawn from stock);
- perform calculations (eg Quantity x Price = Total Cost);
- print out (or display on screen) the information you want, in the ways you want it;

- add new field(s) up to the maximum allowed by the database in use (eg add "Where Stored" field to each record);
- search the file, or part of the file, according to "search keys" you can alter as required (eg all books from Penguin (search key "Publisher: Penguin") with fewer than 30 copies in stock (search key "Quantity: <30")

As the BBC Micro is almost universally available in schools, here are some databases worth considering:

NAME	BASE	MANUFACTURER	COST	COMMENT
Bel Base 2	disc	Bel Tech	£27	20 fields @ 60 char 2400 rec max; data very easy and flexible, adequate for departmental use
Masterfile II	disc	Beebugsoft	£19	very similar capability to Masterfile
Beta-Base	disc	Citrix	£25	powerful, but "advanced" features of other
Discdata	disc	Watford	£17	powerful, similar capabilities to Beta-Base
File-Plus	disc	Watford	£43	powerful and flexible, high capacity, with Merlin Scribe W/P, or both applications
Database	ROM-disc	Merlin Computer Products	£49	powerful and flexible, high capacity, with Merlin Scribe W/P, or both applications
DataGen	board	Gemini	£130	extremely powerful, suitable for business
STARBASE	ROM	GCE (Cambridge)	£86	"free" utilities disc + Wordwise/View/merge

(equal to or less than 30);

- sort files, ie arrange the file in numerical or alphabetical order - preferably with the ability to order in more than one field (eg sort in order of category, in order of title - ie the file will list language books before novels before poetry books... with the language books in order, then novels in order, etc...);
- merge files (eg produce a single "total stock" list from several separate lists).

I also think it is essential for a database to be able to integrate with a wordprocessor, and this feature should be considered before you buy even if you do not yet use a W/P. I use Computer Concepts' Wordwise Plus with the database Masterfile II from Beebugsoft: letters from Wordwise files can be "personalized" by drawing the names and addresses from Masterfile, or, say, Masterfile assessment records can call for the insertion into the printout of one of a number of Wordwise-produced comment paragraphs. Without such "integration", the usefulness of both applications would be greatly reduced.

Cassette databases are severely limited, and not nearly fast or flexible enough for serious use; disc-based databases like Masterfile are excellent, and cost around £20; ROM-based databases would handle almost all school admin: they are very fast, but

their sophistication means much more for the user to learn, and they cost from £60 to over £100. I would recommend a disc-based database as adequate for any department, easy to use and flexible enough for anything I am likely to require. These come with a full manual (check its intelligibility) and, usually, a demonstration set of data files, and using these will allow even the type to set up and use his own files within the hour.

Before buying, try to anticipate future requirements: will you want wordprocessor integration? does this database allow sufficient fields? can you select the output of certain fields only? can you easily alter the format of the output? will it do "global calculations" (eg total and percentage everybody's six assessments on one instruction)? will it hold all the records you may require?

Don't buy blind, by mail or from a chain store. Don't be over-impressed by the "fantastic speed" of some databases - all will be immeasurably faster than your pencil. Make backup copies of your program disk, and all files as you create or update them: these steps take seconds, and can prevent disaster!

Bill Smith is principal teacher of English, Viewforth, High School, Kirkcaldy.



A FREE Modem for every Secondary School!

What is the DTI offer?

The Department of Trade and Industry is offering FREE OF CHARGE, a high quality modem to every Secondary and Middle (state and independent) school in the UK. The letter outlining the details was sent recently to every Chief Education Officer and Computing Adviser.

Why modems?

As a result of the very successful Microcomputers in Schools scheme it has become apparent that the schools need a modem to connect to one of their computers in order to take full advantage of the new technology. Schools can then use their microcomputers for both communications, using electronic mail and to access the growing number of on-line databases.

Which modems?

The modem is one of two types already being used by subscribers to The Times Network System. The Tandata 512, and the Dacom DSL 2123 AD. Both are V21/V23 modems offering 300/300, 1200/75, 1200/1200 half duplex with autodial and autoanswer facilities. Each one has a guarantee and comes

complete with the appropriate computer lead.

Which micros?

The modems are being supplied for use with the BBC, RML 3802 and 4802 machines.

What are the benefits?

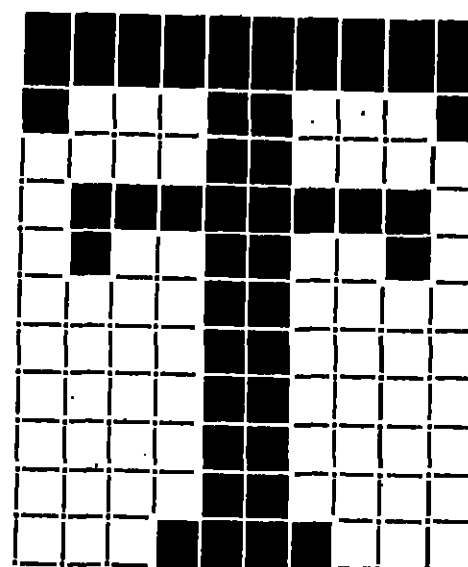
The benefits of having a modem connected to your micro are enormous. The micro becomes a much more powerful communicating tool.

Who is eligible?

Secondary and middle schools have been specifically named as the institutions for whom this offer is being made, however there are some options for other establishments. The DTI has stated that it may be possible for special schools, teachers centres, primary schools, further education colleges etc to become similarly equipped under the scheme.

When is the offer available?

The returns to the DTI are due today March 7th 1986. So if your computer adviser has not already done so please ensure that he/she contacts the DTI to let them know how many modems your authority requires.



Technical Specifications

Tandata TM512 TP

V21 300/300 bps
V23 1200/75 bps
V23 Pseudo Duplex Mode, compatible ONLY with the TTNS system.
V23 Half-Duplex Mode.

AUTO-DIAL

AUTO-ANSWER
Auto-sensing of Pulse or Tone Dial.
Loudspeaker for easy call monitoring.
Integral Power Supply.
Rear Socket for Telephone Handset.
Front panel On/Off Switch.

This modem now provides compatibility with both TTNS and CommuTel styles of working.

Dacom DSL2123-AD

V21 300/300 bps
V23 1200/75 bps
V23 Pseudo Duplex Mode compatible ONLY with the TTNS system.
V23 Half-Duplex mode under RTS control.

AUTO-DIAL up to 18 digits can be dialled and may contain interdigit pauses, as required.

AUTO-ANSWER under DTR control.

Compatible with both TTNS and CommuTel styles of working. The Modem will power-up in TTNS mode by default. Commands are available to switch into either 'CommuTel' mode or 'TTNS' mode. Auto-sensing of Pulse or Tone dial.

Rear socket for Telephone handset.

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20-49	£160
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Schools of 100 pupils or less £65
The above includes an annual subscription to TTNS communications software for BBC, RML3802, or 4802, IBM PC, AT, XT, manuals and a function key strip.

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TTNS communications software.

The TTNS communications software can

be used to access the Times Network and a wide variety of other networks and database services. Viewdata, 80 column monochrome, colour, or any combinations of these, can be handled by the TTNS software. The other services are UK and overseas based and include TelecomGold and ECCTIS (Educational Counselling and Credit Transfer and Information Service). The DTI are also working to establish a national computerized information service, NERIS (National Educational Resources Information Service) which will be accessible using the same software.

The TTNS communications software can be purchased separately. Software, manuals and function key strip (no subscription) price £30.

DTI Software Scheme.

The above offers are all eligible under the DTI software support scheme. The price of the software (£30) may be reclaimed in full before March 31st and 50% (£15) thereafter. These grants are dependent upon each LEA being able to accommodate such requests from their existing DTI Educational Software Support Scheme budgets.



Moyna Doyle

WHAT TO DO NOW?

If you have any queries about any of the information in this advertisement please contact one of our Schools Coordinators, Moyna Doyle or Julia Cooper. They will be pleased to answer all your questions and are looking forward to hearing from you.

Direct telephone numbers to the Times Network Systems are:

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Julia Cooper

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April 11th Strand Palace Hotel, LONDON

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Make a date in your diary NOW. TTNS will be very pleased to welcome you to any of the presentation venues detailed above.

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PenDown was designed by Peter Hunter, a working teacher from Somerset, on the basis of extensive classroom research for a doctoral thesis into the difficulties and needs of children using existing word processing programs on the BBC B.

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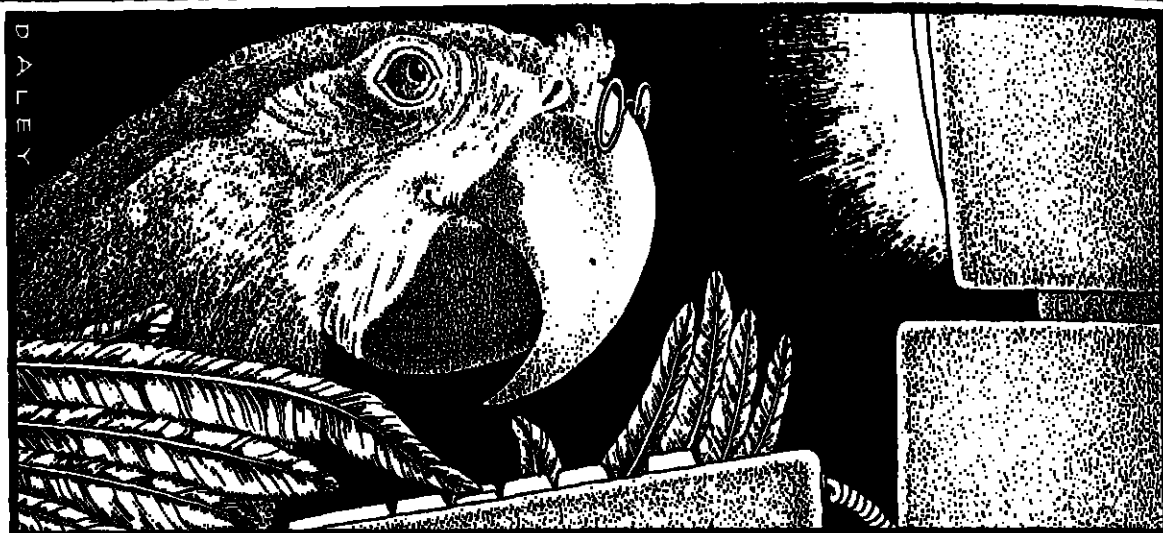
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Namal Type and Talk Speech Computer
Price £171.35 incl VAT
Cambridge Microcomputer Centre,
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Price £33.35 incl VAT plus £10 for
Acorn/Texas speech chip.
Computer Concepts, Gaddesden
Place, Hemel Hempstead, Herts HP2
6EX.

"A bird in the hand," said the uncannily human voice with a mild South African accent. If I hadn't seen for myself, I wouldn't have believed that it was spoken by computer. But speech of this quality was produced at GCHQ in Cheltenham by a high-speed mainframe that had been working solidly all weekend.

Most people totally underestimate the problem of getting computers to talk intelligently. Although immense strides have been made in low-cost speech synthesis, there are major trade-offs between quality, flexibility and ease of use. Here are some comments on two of the most interesting low-cost solutions for the BBC Micro. Either could be a wonderful stimulus to language and writing development in any school.

The Namal is less than half the price of the next cheapest, self-contained speech synthesizer (the Votrax) and is reputed to use the same chip and offer similar quality.

First impressions were very off-putting. The Namal arrives without even a power plug, let alone a cable to connect it to the computer. Once you've fitted the plug and switched on, it says a robotspeak "Ready, master"—a great turn-off for female users and

Speak easy

by Jacquetta Megarry

anyone with a mental age of over eight. The manual is incredibly unhelpful. Starting with pages of off-putting details about setting internal DIP switches, it tells you nothing about how to make the computer drive it. Let me summarize many hours of trial and error.

• Set the Namal to parallel and use a printer lead; you'll need a special cable to use it on serial.

• Type in VDUI2 to tell the system to treat it like a printer.

• If you try to drive it from Basic, it precedes every utterance with "GREATER THAN" (the Basic prompt) and follows it with "MIS-TAKE" (because it isn't a valid Basic instruction).

• The last problems are avoided if you first type in a four-line Basic program.

Why is none of this explained? However, the struggle suddenly seemed worthwhile when on impulse I selected Wordwise and was astonished to find that option 6 (Print text) made the Namal speak my text! Admittedly, some of the words were pronounced strangely, but some selective misspelling and use of its phoneme mode produced satisfying improvements.

The Namal's speed of talking cannot be adjusted without going inside the machine: a rotary knob like the volume control would have been ideal. It is also a shame that it is so badly let down by its documentation. But intelligible speech direct from word-processed text at this price is a remarkable step forward.

Computer Concepts' Speech ROM embodies a quite different approach. The ROM is fitted internally, and speech sounds are programmed, using commands such as "UTTER and "VOICE". You can control pitch, stress, intonation and insert pauses. You can even "TUNE". The manual explains all this quite clearly, giving plenty of examples and a listing for a spelling tester program.

IT careers

Working in Information Technology: A Careers Pack
Audio cassette and booklet
British Telecom, 81 Newgate Street, London EC1.

British Telecom has produced this pack, which contains a 35-minute audiotape accompanied by MSC booklet, in an attempt to highlight careers in Information Technology. It is being issued to 7,500 schools.

Both booklet and tape suffer from not being absolutely clear about their intended level of audience. Sixth formers studying A levels will find the booklet section "Introducing IT" condescending. When asked, for example, what is meant by the term information technology, they are immediately told "This is where it gets complicated".

Thankfully the bulk of the booklet consists of printed interviews with various IT workers who convincingly argue that IT is an interesting area to work in. And the (welcome) message is that girls succeed in IT too. Teachers will find the section on education and training for working in

Programming a phrase involves a little practice in choosing the codes from a list of 20 vowel sounds and 24 consonants. Most of these bear some relation to phonetic spelling. For example, to speak the word "see" you would type "UTTER <I> S E". This compares very favourably with the 20-line machine code program you need to make the Cheetah Sweet Talker say "see".

You use * to mark the main stress of a phrase, and + as a secondary stress marker. Tones are specified by numbers within angle brackets. The example below speaks the name of a distinguished periodical with great panache.

*UTTER <I> TIM Z e D Y U H K + A
SH U H N U H L S * u P L I M U H N T

Nevertheless, using the Speech ROM obviously takes more time and skill than getting the Namal to speak—once you've overcome the initial obstacles. To assist editing, Computer Concepts have provided a speech editor as a delightful 15-line Wordwise Plus segment program. Using this, one teacher has already produced programs for teaching French with quite credible pronunciation. The "SYNC" command allows you to synchronize the use of speech with what the program presents on the screen.

For those who find this approach too technical, Computer Concepts are already demonstrating a text-to-speech ROM that parses each sentence before instructing the Speech ROM how to deliver it. (A complex 40-word sentence only takes half a second.) It interprets punctuation intelligently, automatically providing suitable intonation and pauses. Its quality and flexibility seem remarkable.

The speech extension ROM works only in conjunction with the Speech ROM, so you need two recent ROM sockets. It will be available in January, at around £10 extra. Computer Concepts claim that this system—costing £50 or so—could be comparable with the famous Commodore Amiga.

Incidentally, although the Speech ROM works on the BBCB+, the Texas chip must be fitted in the left-hand of the two sockets, not the right as stated by the BBC B+ User Guide. Also, there is a wonderful demonstration disc (which, strangely enough, Computer Concepts don't seem to sell) that's a great help for any new user.

IT quite interesting. For "professional technologists" at CSE or O level, computer science is part of a "good basis" . . . (If available), whereas at A level the essentials are maths and physics "together with other subjects like computer science, craft, design and technology or chemistry". These should lead to a degree in "electrical or electronic engineering", mathematics, physics or computer science (certainly course only).

Perhaps I'm wrong in thinking that to get home to many pupils a tape needs to be more Radio 1 than Radio 4; Maggie Philbin's linking interviews with various big wigs and some actual IT workers and students are very firmly in the Radio 4 mould. Once again, there are lots of women's voices.

Sir Kenneth Corfield of STC says he would like much more of his company's future IT staff needs to be provided by girls. British Telecom alone recruits 300 "high quality" graduates each year. Technicians are also needed. The rewards are high and minister John Butcher makes the point that attitudes have changed about the desirability (or not) of working in industry.

Every time I reach for my copy of *Alice in Wonderland*, I am tempted to skip the start and launch straight into the fantasy sequence. Therein lies a problem. How would I appreciate the difference between reality and dream? And when I reached the end, would I know reality when it re-occurred? Certainly the BBC recognized this problem in their recent adaptation of *Alice in Wonderland* because each episode began with grey reality to set the scene and then coloured to the dream.

But what has all this fanciful nonsense about fantasy and reality got to do with software? Step into the looking-glass world for a moment.

Here is a new piece of educational software in the computer wonderland. It has a name on the box—**SUPER-HUNCHYWORDTEL**—sounds promising—and here's the review.

• Not exactly a program but more a kit to be used with a high level language.

• Papert said that the computer should become the modern "pencil" of the learner but this kit makes the computer the propelling pencil of the modern world.

• It is a content free program which allows dynamic verbal, arithmetic and artistic interaction.

• It costs £40 but has a 500 page colour booklet, contains 200 programs, comes in a nice box and will keep a pupil occupied at the keyboard for 57 days—so it is worth every penny.

• It incorporates all the best games software ideas and when I saw it on television being tested by 16-year-olds (although it's designed for six year olds) they gave it their approval.

• Three friends I have phoned really like it and use it themselves every day.

• So this is the piece of software for 1986 heading for my personal top ten.

Does the looking-glass reflect a nightmare or just an exaggerated reality and would you buy a piece of software based on this information? Before you answer, let me tell you that I have seen something similar to every one of these statements recently.

The lack of educationally relevant detail is hard to excuse. Where are the aims, the details of development, children's reactions and successes, details of curricular fit or even what the package actually does in a classroom? Yet many articles, reviews and blurbs on "educational" software demonstrate exactly the same worrying symptoms by concentrating on the type rather than the reality.

With the DTI Software scheme now operational, we really cannot ignore this problem because we are being asked to choose software now; and sometimes that means it will be based on ridiculous, flimsy and occasionally downright fraudulent evaluation. The software may be educationally unworthy but a review may present a dreamy account which the teacher may legitimately mistake for rapture over high educational quality despite the lack of real justification.

On the other hand, this very lack of relevant information may make the teacher suspect the hype conceals a veritable wasteland while the software may be very good. Whatever permutation you choose, this lack of rigour in evaluations contained in reviews and articles tends to muddy the water and make informed choice virtually impossible.

Publishers are responsible for some of this but ironically they can also be the victims of rather peculiar reviews too. The most recent example of this was the "bad crit", Amazon reviewed for their *Granny's Garden and Dragonworld*.

Both these packages enjoy great success in schools because they do address educational issues and contain a lot of relevant information, suggestions and materials. So much for reviews.

But surely he overstates the problem, many a sage reader will think. We have faced this problem in other guises for many years. How do we judge the texts which we purchase for schools? Don't we fill out the publisher's and reviewer's hope and evaluate the text ourselves by sending for a review copy? This model will not apply to software. Software publishers are notoriously chary about sending out review copies. Therefore, it is unlikely that, at every school, such direct evaluation can take place despite the fact that it is in the school where the software must perform successfully.

When we ponder texts, we base our evaluation on a large corpus of profes-



Through the looking-glass

Graham Turnbull tries to distinguish between fantasy and reality in software reviews

sional experience. That experience in software is not necessarily so widespread nor is it so fully developed. Many of us are "naïve" users who are just testing the water and so we rely on "expert" opinion. But so we rely on real educational computing experts will admit that they cannot be jacks of all pedagogic trades. They cannot keep their finger on the pulse of computing, all school subjects and current practice.

I do not intend to condemn every writer on software. There are a number of very worthy articles which feature in admirable publications. However I do wish to sound the warning bell over the rather less rigorous material which is produced. I feel that we must take care that such techniques do not leak into all our articles.

To date, commercial pressure and technological change have combined to produce a headlong rush "forward". The white rabbit had been spotted and the chase has been on. The pace music "Top Forty" serves a similar function for the popular record industry but at least the "Top Forty" doesn't claim to tell us what is best in classical and jazz fields.

Is this type of popularity/sales assessment at all suitable for education? If we recognize that there is no best teaching method and no best text book for every class, it is hard to see how there can be a best piece of software. Similarly, the idea of "keeping up" with technology can be treated with some suspicion. Teachers do want to know what is being developed in their field but it is hardly desirable or even realistic to choose software just because it is the "latest thing". We need to know how useful a package will be in school.

It is not my place, in this article, to say what is the best use of a computer in school. There are many who will proclaim the virtues of "content free" packages—a rather unfortunate term which probably means software which is "capable" of doing "this" and "not

restricted to specific teaching points. There are those who favour "number crunching" or "drill and practice". Others see the computer as a vehicle for educational change—a way of altering classroom practice. That is fine as long as a reviewer reveals his/her personal preference and reviews what each can or cannot do in the classroom and allows the teacher to be the final arbiter.

I know there will be many arguments about what educational information should be included and how time consuming all of this will be. Some packages will cause problems. If the publisher, reviewer or writer is truly interested in helping education, these problems will not be a deterrent. Just for the sake of argument, here are a few things I would like to know: the aims of the software and its target group, how it was developed and trialled, where it fits into current educational practice, practical classroom ramifications, pupil and teacher comments, whether the package "delivers" on its aims and an evaluation of those aims, the methodology employed, and an educational assessment of the associated activities and materials, including the handbook. "Fully comprehensive documentation" is dandy as long as it is not quicker to go on a course rather than trying to learn from the documentation.

The profession has great expertise in assessing the educational value of materials. Each teacher does this every day. But if we have to make choices based on weak information, I fear we may end up with cupboards of unused software. While we stand in front of the looking-glass we can still turn around and choose educational reality; but if we step through, the dream will delude its terms.

"The question is," said Humpty Dumpty "which is to be master—that's all."

Graham Turnbull is Software Validation Officer for the Scottish Microelectronics Development Programme

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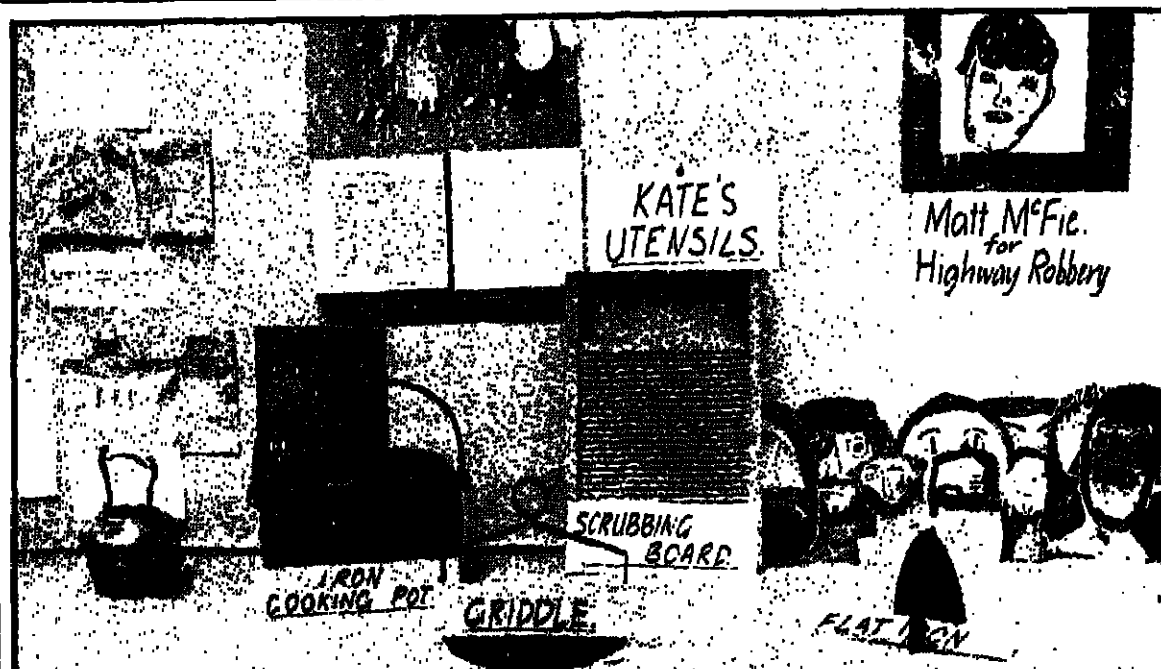
SOFTWARE
REVIEWS

Desperate Journey
Teacher's book with five software discs
for BBC Micro, £35
Jordanhill College of Education, 76
Southbrae Drive, Glasgow G13 1PP.

Desperate Journey marks the arrival of a new genre in primary software. It is the first in a series of "Computer Assisted Topics" published by Jordanhill College of Education. It is a colourful, imaginative and profoundly child-orientated celebration of the power of topic studies. It sets a stage on which the computer plays an important role - but, for once, does not upstage the human actors.

The inspiration is Kathleen Fidler's classic novel. It tells the story of the *Desperate Journey* made by the Murray family, who were evicted from their Glasgow croft to make way for sheep during the Highland clearances. The Murray move to Glasgow, only to find dismal living and working conditions. Finally they emigrated to the Red River Valley, near Lake Winnipeg. The journey features icebergs, typhoid and canoe portage, and on arrival there is the challenge of building log cabins and living off the land.

Selected passages from this splendid novel are interspersed with a rich variety of practical activities and computer programs for individual and group work. There are no dead historical facts, no inert ideas, but many problems for which children devise



Crofters' tales

Jacquetta Megarry on a topic studies pack for primary children

trial solutions that can be tested by observation and experiment. Above all, *Desperate Journey* breathes humanity and lively intellect on every page.

The original topic study was devised by Fred Rendell and has been field-tested in classrooms since 1977. His Jordanhill team's track record in working alongside teachers to improve primary education is well known by word of mouth in Scotland, but this is the first time that a Jordanhill topic study has been published. It deserves a

wide readership.

Each activity clearly states its purpose, how the teacher should prepare, how the class is to be organized, what discussion points will emerge and what the outcome should be. These are suggestions, rather than prescriptions, but most teachers will find them invaluable, at least in time around. The liberal reproduction of pupils' work colourfully conveys what the topic is like in action.

The pack combines a concern for practicality with a regard for authentic primary sources. The credits include teachers in 12 schools (who piloted the topic), Glasgow Division of Strathclyde Regional Council (who seconded a teacher to the project for a year), a weaver from Darvel (whose expert knowledge informed the material on weaving), the City Archives in Winnipeg (for historical data) and Tricia Watterson's niece in Vancouver (for log cabin research).

Tricia Watterson is the project leader, and is mainly responsible for the 29 computer programs. They are linked by four strands interwoven with the storyline. The first concerns the location of the croft house, whereas the second follows the family's different dwelling places. Pupils compare the space allocation in the croft house with

the Glasgow "single-end" and the Canadian log cabin. This leads to maths programs on area, fractions and scale.

The third strand follows the working life of the family as crofters, as dependents on their children's labour in a Glasgow factory and as settlers in the Red River Valley. Pupils compare hands and arms with tools and are drawn into the design of mechanical devices, water power and finally the steam engine. There is a somewhat unsatisfying simulation of a worker's day in a weaving factory and a very simple but pleasing opportunity to colour and design a tartan.

The fourth strand is developed by searching and comparing data files for *Quest*, the popular AUCBE database. The files supplied allow children to compare data from the 1851 census on Glasgow and Glasgow with data on the Red River Valley in 1870.

The programs themselves are of varying standards; most use colour, sound (mercifully switchable) and animation, and all seem attractive. The sophistication of the programming seems to improve as the topic progresses. They also vary in how firmly they are embedded into the storyline - in a couple of cases the links are tenuous. Some are familiar techni-



ques (cloze, Tray and Animal), simply adapted to the context.

Lack of originality is not necessarily a criticism. The software's great merit lies rather in its appropriateness. The surprised delight of the boy who sees the Culmaltie croft appearing on his screen stems from a recognition of the wall frieze that surrounds him - it would not be increased by high resolution graphics or novel programming tricks.

The pack is beautifully presented, with full colour on each of 140 attractive A4 pages. It includes game and map blanks for photocopying and a facsimile copy of an 1865 *Nor-Western*, a newspaper of the Red River settlement. The five well-packaged discs contain 29 programs and there is a keystrip and data files for use with *Quest*. (Schools without the *Quest* database software should buy it separately from AUCBE).

Each page is colour coded: blue for background information and text passages, green for activities and examples of pupils' work, red for programs. Although the programs are listed in the topic outline, it is hard to pick out the red pages. Furthermore, the disc labels don't show what each contains, and their copy protection prevents you from cataloguing them normally - you have to boot up the Menu to see what's there. A list of program titles with cross-reference to discs and book page numbers would have been helpful.

It is a pity that the book lacks any kind of index. Having supplied a rich treasure-chest of ideas, it would have been a small extra step to help teachers to locate material quickly, without having to flick through the pages in sequence.

Desperate Journey is intended for the upper primary years and supports work in language arts, expressive arts and maths as well as history/geography. Even at the rate of two or three afternoons a week, there is plentiful material here for a term's work.

The pack has just been followed by *Travelling Shop* for juniors, and *Fantasy Island* (for infants) is due in May. If the team can maintain their present standard, this trio should be top of the 1986 shopping list for BBC-based primary schools - with or without Department of Trade and Industry assistance.

DIY health

In order to promote the use of computers in schools' biology laboratories, the Microelectronics Education Programme in Wales is piloting a DIY health monitoring package.

Designed for 13 to 18-year-old pupils, the scheme is being piloted in six Welsh secondary schools this term. Programmed to run on a BBC Micro, the MEP-devised software gives pupils an opportunity to rate their own fitness levels by assessing their pulse rate, heartbeat and oxygen intake.

Pulse rate and pressure will be measured via a sensor taped to pupils' fingers. Youngsters participate while at rest and after an exercise session, so that the pulse rate increase on movement can be calculated and subsequently illustrated in graph form.

ECG hardware is also contained in the package but, unlike its hospital equivalent, it runs on a battery rather than mains electricity. This is to ensure that the pupils will not get an electric shock even if they disregard laboratory safety rules. Electrodes tied to pupils' wrists are connected to the battery-controlled ECG box. The information collated is then transmitted via an infra-red beam to the computer, enabling pupils to watch their hearts beat. Again, they test themselves before and after vigorous movement.

Exercise can be seen affecting the respiratory system. The volume of air inhaled per minute is calculated by the computer, and pupils see their breathing quicken as they move. Temperature can similarly be measured and increases noted via a probe placed under the armpit.

Prototypes of the sensors and other hardware developed for the project are being manufactured by Education Electronics of Leighton Buzzard, and it's anticipated that the entire package will become commercially available later this year. And for schools running courses in electronics, the hardware may be supplied in kit form for the pupils themselves to assemble.

Iola Smith

Merlin's Magical Shop
BBC Micro and RML 380Z.
£25 for disc and support pack
GSN Educational Software,
214 Stamford Street, Ashton under
Lyne, Lancashire OL5 7LT.
The Last Adventure
Disc £17.95; Econet version £34.95
LTS (Learning and Training Systems),
Haydon House, Alcester Road,
Studley, Warwickshire B80 7AP.

Merlin's Magical Shop contains a selection of charms, potions and magical accessories which groups of children purchase for use on a variety of quests and adventures. It also acts as a clearing house for any treasures they may bring back and as a recording system which helps the teacher to keep track of their work.

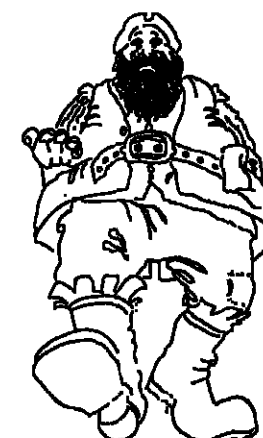
The program, however, is not a simulation. Once the children have selected their equipment and set off on their task, they are guided by their own imaginations and by their teacher rather than by the machine. The teacher also determines the criteria for success and controls the allocation of credit points leading to the eventual award of "Merlin's Hat".

The program's 20 missions, each of which could lead to a substantial piece of work, are not limited to the Arthurian legend, but include "Find the Tree of All Wisdom", "Discover the Ancient Tomb of Rameses" and "Travel through History in a Time Machine".

The topics are supported by a carefully-differentiated series of magical aids, which provide plenty of source

Magical
mystery tour

John Bald on a selection of charms, potions and adventures for children



opportunities for pupils to write their own illustrated adventure games and simulations using the concept keyboard.

The program requires the user to devise a series of up to 16 problems and to link them so that they form a coherent whole, for example by requiring certain problems to be solved before others may be attempted. In practice this is less prohibitive than it might appear, and the authors' example, a fantasy quest for a missing "Crystal Key", comes with a sequel written by a group of 12-year-old children in roughly three hours.

The problems were originally intended to be broadly mathematical, but the scope of both these adventures also includes precise and imaginative writing, graphic design and logical thought. The only snag I found - in the authors' example, not the children's - was a correct answer which was refused because it did not use the required form of words. This was infuriating, as it prevented further progress, but in the kind of problem which will quickly be detected when children try out each other's games.

The clear and comprehensive documentation includes a case study, based in middle and secondary schools, which presents a detailed analysis of the effects on children's thinking of having to set clear and demanding problems within a specified format.

Overall, *The Last Adventure* is a versatile and attractive piece of software, which could well have a much broader range of applications than adventure games. It should be very useful to computer clubs and schools well equipped with computers.

bits

BRIEFINGS

The Special Needs Software Centre of the Microelectronics Education Programme has published a series of "Briefings" on computer-related topics. These include suggestions for "core libraries" of software in certain areas, for example developing writing skills, information handling or developing "links with the real world". Other areas include Logo/turtle graphics, adventure programs and simulations, art, design and music. Up to about 20 programs are recommended in each field.

The "Briefings" are edited by the MEP Special Needs Software Centre based at Manchester Polytechnic, Hathersage Road, Manchester M13 0JA.

A-LEVEL CHOICE

To help students select their A levels and see the consequences of their choice, the Careers Research Advisory Centre has developed a new package in the "Careers on Computer" series.

"Choosing and Using Your A-Level Subjects" is a computer program which matches 62 A-level subjects to 200 careers. Students can find out which A-level subjects are required, preferred or useful for certain careers and particular courses in further and higher education.

The package consists of a BBC Model B disc, tutor's notes, 10 students' workbooks, plus one copy of "Your Choice of A Levels". It costs £45 + £4.90 p.p.

Further information from Hobsons Ltd, Bateman Street, Cambridge.

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Text-based
treatment

Alan Vincent on O level science programs

Letts Revision Software:

Chemistry: Physics
Cassettes for BBC Model B or Electron; £11.50 each
Charles Letts & Co, Diary House,
Borough Road, London SE1 1DW.

Each of these packs comes in a sturdy plastic container holding two tapes and an instruction booklet. The tapes contain a total of 10 substantial computer programs and as such represent very good value for money.

The Chemistry pack covers topics suitable for the O level syllabus, including atomic structure and bonding, the Periodic Table, formulae and equations, apparatus for gas preparations and organic chemistry. The Physics pack is similarly broad, including radioactivity, electricity, heat, motion and light. The programs are straightforward to load, easy to use, colourful and, above all, crashproof.

The topics are covered in different ways. The Periodic Table is revised by a number of options selected from a menu, requiring the user to place a given element in its correct position, to state the element to be found in a given position or to place an element, given its atomic number or electron configuration. A topic summary, by contrast, is covered by a full in the book

exercise in a number of 130-word passages.

"Deduce" is one of the most enjoyable of the chemistry programs. It presents a single clue, such as "grey solid which liberates a gas with dilute hydrochloric acid", and asks the user to supply an answer or request another clue. Up to four clues are given, after which the computer supplies the answer.

Two programs revise the apparatus used in simple gas preparations. These are masterpieces of programming which hold different parts of the apparatus in different squares. The user shuffles them "around and, in effect, works out a jigsaw puzzle to assemble the correct apparatus.

A program on the equations of motion shows two coloured cars moving with different accelerations and plots graphs of their progress. A table of values of a , u , v and t is then shown with one value changing slowly. The user simply has to press RETURN when the correct value is displayed.

The main limitations of these programs stem from factors inherent in a microcomputer programmed in BASIC. The text-based treatments need a response from the user which is, exactly the one programmed. This, unfortunately, is not always consistent. Thus "iron sulphide" was not accepted as a correct answer when "iron (II) sulphide" was required, but "zinc (II) sulphate" was unacceptable as an alternative to "zinc sulphate".

The programs are only available on tape with its slow loading time and, since each one consists of a number of parts linked together, transfer to disc is either difficult or impossible.

In this set of materials a number of "topics" have been put into computer program format which are not suitable for it. If the format had been chosen to suit the topic, the result would have been less artificial. There are, however, some useful programs in the set and the price would justify purchase even just for those who are not

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EXTRA

STOP & PLAY

Clive Opie and Jerry Wellington try out the BBC's new Computer Synchronized Audio programs

COMPUTER SYNCHRONIZED AUDIO
Uniform Motion
Computers at Work
The Mole Concept
Discs for BBC Micro, £19.95 each
BBC Soft, BBC Publications,
PO Box 234, London SE1 3TH.

All three packages in this review involve the technique of Computer Synchronized Audio (CSA), which has been introduced by BBC School Radio. This involves a voice-track (played on an audio cassette) and synchronized computer software, in this case in the form of a disc for the BBC Micro. No connector is needed between micro and cassette player - the necessary STOP and PLAY controls on the recorder are carried out by human hand.

The disc, cassette and booklet of *Uniform Motion* provide a useful revision package for the serious O-level Physics candidate (or in future top-range GCSE candidate), but for one glaring mistake in the program.

The mistake occurs early on. Great pains are taken to distinguish the concepts of "speed" and "velocity". The audiotape and the screen presentation then go on to define velocity as "distance travelled" over time taken. Later in the program, this mistake is reinforced by using velocity-time graphs to calculate the distance travelled by a car.

Why does the program bother to distinguish the concepts of "speed" and "velocity"? The underlying concepts of "distance" and "displacement" are not also made clear? It is astonishing that when reviewing software the publishers do not employ an independent proof reader or assessor to check a program with the same rigour and caution as they would a school textbook. If an exam candidate were to use the BBC definition of velocity suggested in this package, he or she would lose marks.

The mistake is unfortunate, because otherwise the package is interesting, well presented both visually and aurally, and fun to use. Its pace is far too fast for use as an initial teaching package, but would be ideal as a revision aid. In actually deriving the equations of motion, it may go beyond future syllabuses for first examinations, but the

derivation will certainly help students to understand and use the equations.

Finally, two small criticisms are worth noting. One car used to show uniform motion is described as "Noddy's car" - greeted with laughter, hoots and heckles by 15 to 16-year-olds. More seriously, the colourful, exciting flasher car presented in the first frame is said to accelerate from 0 to 60 miles per hour in 8.5 seconds. In the next frame, the user is told that acceleration is measured in units of metres per second per second (m/s^2).

Charges of inadequate independent assessment and incautious proof reading can also be levelled at *The Mole Concept*. This program is in three parts. The first starts with the statement that a mole is a number, "an astronomically huge amount", and that the reason we need think about it is that we have to look at things which are "infinitesimally small - atoms". Is there really any need for such ostentatious language?

It then proceeds to introduce the structure of atoms with helium, hydrogen, carbon and oxygen being cited as examples. Finally, it introduces the term molecule, and a calculation of the mass of a water molecule is carried out. Apart from being too long, this part is reasonably well presented.

Part two begins by making life difficult when it states that you could define a mole as "the number of atoms of hydrogen in one gram of hydrogen", but this, for reasons not disclosed, is not the case and the mole is actually defined as "the number of atoms of carbon-12 in 12 grams of carbon-12". Why not simply stick to carbon-12 and be done with it?

It is now that the software goes rapidly downhill. After working out the mass of a mole of water, the program dives straight into a chemical reaction between sodium hydroxide and hydrochloric acid. The intention is

to look at balancing the equation for the reaction with a view to working out the quantities of molar reactants needed. However, it was the view of the teachers and students alike, that this work is totally out of context.

We both feel that the method of Computer Synchronized Audio has potential in providing worthwhile learning. The combination of watching, listening and having to press the right keys and controls at the right time keeps the user alert and could certainly be described as interactive!

Added to this, it is unforgivable in a piece of science software that the definition of a molecule, which is acceptably given as "a combination of atoms", is then so blatantly misused. This is doing a disservice to teachers who have painstakingly taught the difference between molecular and ionic substances. It might also be making a mockery of the intelligence of most students (especially those at whom this software is apparently aimed), when they talk about a "loose sodium part" and a "loose chlorine part" when talking of sodium and chloride ions in water.

The third part of *The Mole Concept* (which can be run separately if so wished) simulates a titration. Teachers and pupils were rather scathing about this section. The graphics and procedure for "doing the titration" are not very motivating and, as the main emphasis is on the calculation, why is

so much time spent on the simulated practical element?

Finally, and this is a general criticism, does anybody producing software ever take the time to see if anything is already on the market, which suitably covers the area they intend to develop? As an example, System Software has a package called *Titration*. This covers a range of calculations for titrations and allows users to put in their own "practical" results. This package alone supersedes the need for section three of *The Mole Concept*.

Computers at Work is aimed at providing the user with an insight into the uses of computers in "the real world" of wordprocessors, information handlers and control systems (robotics). The software is in three parts. Only the first of these uses the medium of Computer Synchronized Audio.

The "Work Game" title appears to be rather misleading, as this part of the software is in two sections which look at robotics and the operations of a wordprocessor, neither of which would seem to constitute a game.

The CSA discussion of what wordprocessing is and its visual presentation has been extremely well produced. Not only is a very lucid explanation provided of what a wordprocessor can do, but users are actually allowed to experience some of its capabilities.

This exercise, however, has an unfortunate outcome. Obviously the software "knows" what the correct greeting should look like and if you do not get it right (perhaps because you have been having fun playing with the text), it tells you so. This seems to suggest that wordprocessors have some sort of artificial intelligence which in reality they do not. On the whole, though, the section is ideal for an introduction to wordprocessing.

"Database" endeavours to introduce the concept of a database by

allowing you to build up your own file of data and then to interrogate it.

Unfortunately, "Database" does not match the quality of "Word-processing". At most stages far too much information is presented on the screen at once, making it difficult to understand what to do next. The setting up of the file of data, although reasonably straightforward, could be a lot more friendly, eg letting you know which record you are on as you build up the file. Added to this, interrogation of the file seems to be inordinately cumbersome. Simply discussing the role of computer databases and using a database package would be far preferable. There are now on the market several acceptable database packages and a recent production of *Find* (from the Domestec MEP Regional Centre) is simplicity itself to use.

Finally, "Robot" allows you to move a robot around a kitchen. Your objective is to use the robot successfully to pick up and deliver dirty plates to a dishwasher; then, once washed, to stack these plates in a cupboard. The program is reasonably well designed and uses a LOGO-type language to achieve the operation of the robot. The commands are easy to use and are satisfactorily explained in the accompanying booklet. Procedures are also available for use.

"Robot" has been well produced and is a worthwhile introduction to robotics, before moving on to programming Big Trak or using Logo. But why can't we load the dishwasher with more than one plate, or store more than one plate in a cupboard space? It seems a very inefficient dishwasher and use of cupboard space.

Although we have been critical of aspects of content in the above three packages (particularly *The Mole Concept*), we both feel that the method of Computer Synchronized Audio has potential in providing worthwhile learning. The combination of watching, listening and having to press the right keys and controls at the right time keeps the user alert and could certainly be described as "interactive". The idea and the practice of CSA is worth exploring and studying further.

Staff and pupils of King Egbert School, Sheffield, co-operated in this review.

Fishy business

Jackie Hardie on three packs for extending the primary curriculum

The Sea
For BBC Model B, B+ and Master Pack of four programs on disc or cassette £35+VAT; individual programs £12+VAT (disc) or £10+VAT (cassette).
Farnleaf Educational Software, Farnleaf House, 31 Old West Road, Gravesend, DA11 0LH.

The First Collection
Six programs for BBC/Electron Complete pack on disc £124+VAT; individual programs on cassette £34+VAT.
British Educational Software Supplies, Ellesmere House, Keyingham, Hull HU12 9SP.

Grass
For BBC, 480Z, Nimbus £25+VAT or available on I.e.a. licence.
Newman Software, Newman College, Bartley Green, Birmingham B32 3NT.

These three packs are aimed at the primary sector. In the first, Farnleaf Educational Software have put together a suite of programs which, they claim, can not only be integrated into the curriculum of the primary school but also extend it. They should

help children to develop thinking skills by encouraging them to make decisions, form and test hypotheses and solve problems.

The final program, *Thornsea*, looks at the sea as a food source. The children have to consider how a fishing company operates to make profit and stay in business. Again, there are many variables to consider, such as the siting of fishing grounds, the opening times of the fish market, and the fishing hours.

The graphics and menu of all the programs are clear and the instructions easy to follow. The accompanying work sheets and record sheets are straightforward. All are aimed at top junior children, but only the ablest ones will be able to cope and they will need several attempts to familiarize themselves with all the activities.

First Collection contains six programs, which cover areas of primary mathematics such as the numbers 1-10, addition of abstract numerals, odd and even, multiplication and bearing. The graphics are bright and clear and all the programs are easy to use. The teaching notes recommend that a teacher read the accompanying instruction cards to children so that a meaningful context can be established

for the exercises. So none should present any problems. In one program, *Swallows*, they have to count the birds on a telephone wire. Accuracy and speed are instantly rewarded by a flag being hoisted up a pole.

Grass, developed by Newman College, is an acronym for Graphics, Searching and Sorting. It comes with a 38-page handbook. Any teacher not familiar with information retrieval systems would have to start on page 20, "for first time users". Here instructions are clear and explicit and must be read before the program is used.

The files provided in the pack are on "Insects", "Ponds", "Monarchs", "Birds" and "Volcanoes". The menu is clear and the question-answer procedure is easier for primary children to use than that of *Quest*. Interesting examples are given. Consider "Birds": the data was collected by children as a result of observation and acquisition.

The file is said to consist mainly of common British birds, but when you see puffin, penguin and golden eagle in that compiled by Birmingham children, you wonder how much of it was constructed from observation! This is a useful information - handling package.

The data was designed to be searched on large mainframes, and a microcomputer version inevitably imposes some limitations. There is not enough memory, and *Quest* and *Inform* will not handle all 70 variables for 40 or so words for each district. The package includes a small BASIC routine to select up to 16 variables for each district at a time. Together with key information about the area, this is then written to a file in a form that *Quest* or *Inform* can handle. This is tedious and takes several minutes. The user must make careful notes, since the variables are only referred to by a number code when in *Quest*.

The next generation of hardware will allow frondier and more visual methods of searching and displaying census data. In the meantime, this package lets students explore contemporary human geography in a way that has not been possible before. It lacks visual appeal (no colour or graphics) and in some ways the package seems dated. Pupils are expected to make notes of action taken, to handle disc files a lot, and to refer both to the handbook and to relevant maps while using the system.

However, by allowing a school microcomputer to search and process the 1981 census data, this package represents an important breakthrough. It is extremely good value for money and can be used with students at all stages from upper primary to postgraduate.

Exploring small areas, statistics, without

A touch sensitive

Tandy Electronic Book
BBC B (Disc or Cassette)
Tandy Electronic Book £15.50 + VAT; BBC Micro Interface Lead £5.50 + VAT; Enabling Program £12.95 + VAT; Set of Blank Overlays + Stencil £1.25 + VAT; Complete Package £31.95 + VAT.
Daco Software, 59 Mackenzie Road, Birmingham B11 4EP.

The *Tandy Electronic Book* is similar in design to an A4 plastic ring binder. Tandy's "Book", however, has 12 pressure pads (unlike the Concept Keyboard's 128 touch sensitive areas) which are used with overlays created by the teacher or parent. Once programmed, the book is used by the child in place of the computer's QWERTY keyboard. This makes it a useful device for children with motor coordination problems and the very young child in the nursery or home.

The Daco Enabling Program has been designed for use with the BBC microcomputer and the Tandy Electronic Book. It comprises two discs with a comprehensive instruction manual in a hard plastic folder. The system disc allows teachers or parents to create, save, load, delete, and edit programs. The second disc is used to store the menu of programs (up to 24), made using the first disc.

Two types of programs can be made using this software. The first allows the teacher or parent to decide what will appear on the screen when any of the 12 pads is pressed. Only text screens can be made but there are a number of options available to the teacher. These include double or single height, coloured text and a printed copy of the screen display for the teacher's re-

cords. (No print-out option is available when the child uses the program.)

The second type of program is a little more useful and offers extra options. These include sound, and the programming of "right" and "wrong" messages in response to pad depressions by the child. With this type of program the child has to respond to the screen display.

It proved difficult to assess its potential in the classroom because of its many limitations and the amount of time it takes to make both the overlays and program the pads. For example, when entering the text for a screen display the teacher must decide exactly where the text is to start. This is done by using the BBC's arrow keys. Once this position is chosen, the arrow keys become inoperable and the only way to move the cursor is with the space bar and delete keys. This is very annoying if a mistake has been made near the beginning of text when you have almost completed an entry. Everything must be deleted up to the mistake.

The program lacks the facility for the child to build sentences, as each screen display is cleared every time a pad is pressed. The lack of a print option at the user stage means the child has no record of work. The book uses American A4 size paper or card, which means cutting one's own paper, and the holes for the ring binder must be carefully punched and strengthened to avoid movement of the overlay.

I trialled the package in a special school where I felt it might have a useful role. However, most of the teachers who used it found it lacking. The Daco software was clumsy - it could, however, be improved by including a sentence maker option, a print-out option for the child and an improved editor.

It remains to be seen if future software will enhance the book's current limitations to raise it to the level of being a useful addition to a school's computer resources.

Chris Drage

Computers & Basic Education

Seven Computer Programs for use in basic education

This software is suitable for use on the BBC microcomputer Model B and there are seven programs on a variety of subjects. Programs focus on Gosh, Meters and Bills, Roles, Telling the Time, Punctuation, Spelling (2 discs), Crosswords (2 discs) and the 24-hour clock and Timetables.

Price: £7.00 each double disk (postage 35p)
£5.00 each single disk (postage 35p)
£34.00 complete set of 7 (saving \$5.00) (postage £2.00)



Computers in Language and Literacy Work
by Janet Leonard
Published jointly with the ILEA, this handbook aims to help ESL and Basic Education Organisers and Tutors by surveying software and considering future developments. It is also a straightforward book for the non-expert.

Price: £24.50 (plus postage 50p)
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The Networks and Communications Magazine

Trouble free

Library
Disc for BBC Micro £9.95
RESOURCE, Exeter Road, Doncaster DN2 4PY.

It's a constant surprise to me how meagre is the supply of trouble-free software for school libraries using school micros. There are complex programs for simple micros and simple programs for complex micros - but somehow no one's yet achieved a sensible medium. Until one can automate the horrific chore of entering bibliographic data into the file, to computerize a library must remain a massive undertaking anyway.

This particular package is very simple, very effective, very nice, and designed for primary school use. And it runs on the BBC Micro (and newer Acorns). It's a good fixed-format data-



base, able to cope with 1,000 records (and already includes a couple of hundred books). The data lines (fields) are title, publisher, minimum age, topic code and key(s) - very simple.

Simple too is the database management, with everything in upper case. You can scan the records, but only from the first one; add a record, but need to know a vacant number to put it in; change a record, but must re-type the whole entry, not just the offending line; look at an individual record, but only if you know its number; and search by up to three strings (which

don't need just to be keys). You can also take print-outs.

The little booklet that comes with the disc gives a suggested list of about 70 keywords. You can of course modify it or devise your own list, but users must have access to the topics and you mustn't change your criteria over the months.

This program does have its limitations, but they don't detract from its delight and dedicated BASIC programmers will be able to get round them all.

Eric Deeson

Bingo!

New Game
Play and Read Series
40 or 80 track discs for the BBC B. Price: £28.75 + £1.20p + p.
British Software, 29 St James Avenue, Upton Heath, Chester CH2 1NB.

New Game is the first of four packages in the "Play and Read" series. It is described as "a revolutionary new computer assisted learning aid" and contains two discs, five reading booklets, an audiocassette and a set of bingo cards. It is intended for complete beginners and the package introduces 216 words from McNally and Murray's Graded Vocabulary word list.

Initially, the child listens to a story introduced on the cassette, which is synchronized to be used in conjunction

with the first disc. The child can then play the reading game on the second disc before going on to read the booklets, which must only be read once the words have been learnt. Five separate reading games, each with five difficulty levels, are included to correspond to the colour-coded booklets.

This package relies firmly on a "breakdown in to sub-skills" approach to this reading process and, although the underlying emphasis is supposed to be that reading is fun, the message coming across to the child is: stare, stare, stare. It's very hard to read! It is described as "a very difficult process".

The four introductory black and white booklets are of a very poor quality and are full of inconsistencies, lacking capital letters and full stops, but including question marks and commas, while the main booklet, still without capital letters, includes items such as speech marks and colons. It is even worse when you consider that these booklets are the "reward" for

programs. Teachers, reading experts and parents all agreed that they wouldn't want children to begin reading with this kind of material. Even the cassette, spoken by Patricia Hayes, is patronizing in its tone.

While the idea of an integrated approach to reading is worthwhile, this package doesn't illustrate the best way to do it. The computer program itself is not too bad, though it could be more user friendly, especially if it were menu-driven. As it stands, it is typical of the high street software produced for home use and cannot be recommended educationally. It is also very expensive for what it offers.

If there are to be follow-up packages in the series, it is hoped that they will be re-thought from the educational perspective, the book materials improved greatly and the price reduced to a more realistic level.

Pauline Bleach

Local areas

Jacquetta Megarry on census data for primary to postgraduate

the tedium of searching through tables.

Each pack contains eight data files. Seven are standard, and contain 70 variables related to major social, demographic and economic features in selected areas that reflect Britain in the 1980s. The eighth file is specified by the purchaser, and enables pupils to compare their local area with Aberdeen, Ashford, Dwyfor, Newcastle, Newham, North Norfolk and Sutton. Additional data files can be ordered at £5 each.

The standard files are accompanied by maps that enable the user to compare one ward with another and to locate wards that are distinctive in ways such as age structure or unemployment. Users can also compare the data on a regional basis by moving between files.

The data was designed to be searched on large mainframes, and a microcomputer version inevitably imposes some limitations. There is not enough memory, and *Quest* and *Inform* will not handle all 70 variables for 40 or so wards for each district. The package includes a small BASIC routine to select up to 16 variables for each district at a time. Together with key information about the area, this is then written to a file in a form that *Quest* or *Inform* can handle. This is tedious and takes several minutes. The user must make careful notes, since the variables are only referred to by a number code when in *Quest*.

However, by allowing a school microcomputer to search and process the 1981 census data, this package represents an important breakthrough. It is extremely good value for money and can be used with students at all stages from upper primary to postgraduate.

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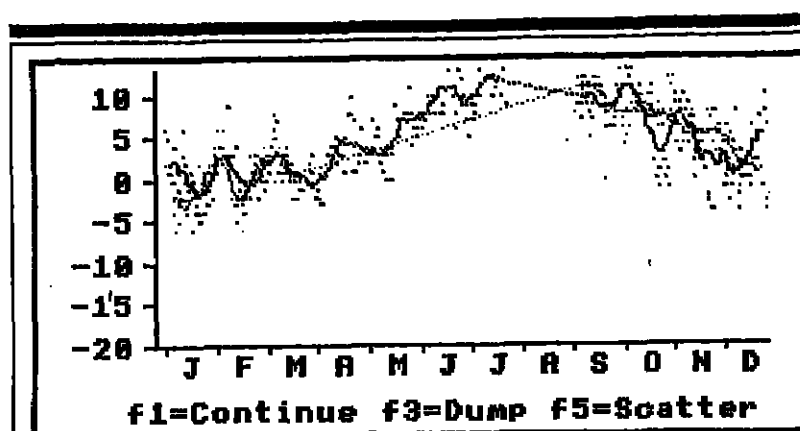
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EXTRA



Fingers in the pie

Eric Deeson on what the software houses are producing for science classes

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Pan Books, Cavaye Place, London SW10 9PG.
Which Flower?
Cassette for Spectrum £9.95
Display Data; Weather Studies
Disc for BBC Micro £15.95 each
RESOURCE, Exeter Road, Doncaster DN2 4PY.
Elasticity
Disc for BBC Micro £9.57
Shell Education, c/o Hobson's, Baleman Street, Cambridge CB2 1LZ.
Crystal Structure
Disc for BBC Micro £9.75
York Science Education Group, Chemistry Department, The University, York YO1 5DD.

Ever since the educational computing bandwagon really started rolling half a decade ago, it's been impossible to say how micros are being used, and how much. A recent article claimed that the rate of appearance of new titles has dropped markedly in the last few months. Here we look at some of the new titles in science that reached *THE TES* in the autumn; one can conclude as much from their number as from any other data.

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Easy writer

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Road West, Gravesend, Kent DA11

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pen and pencil. It is thus particularly

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In each case a street map is display-

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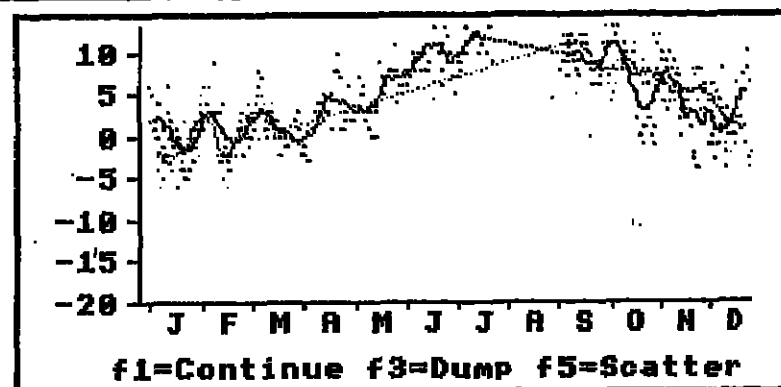
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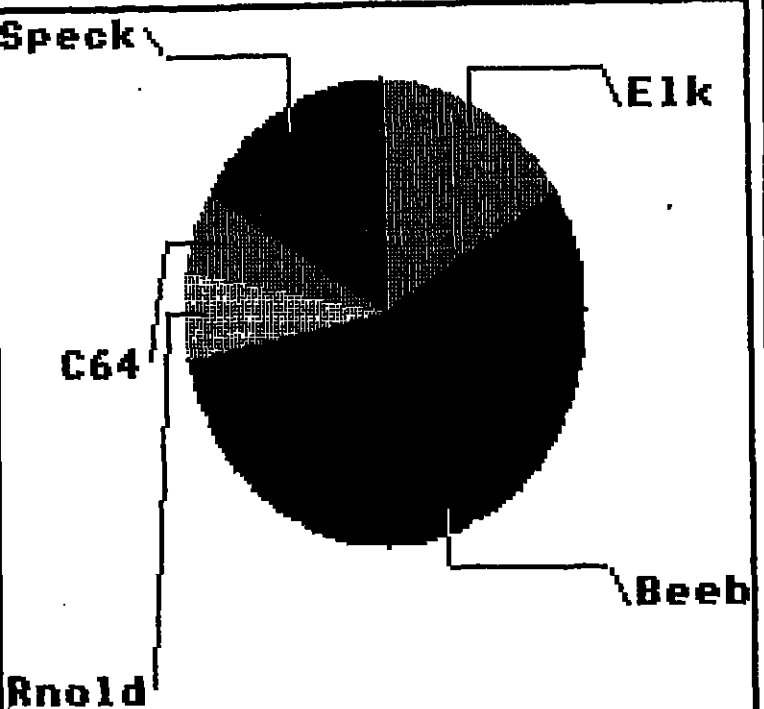
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complex and the paper notes are simpler. All the same these are too sketchy; many non-specialist teachers would find them totally inadequate. Part one is a pleasant little animated teaching sequence, and a bug that makes some parts inaccessible. Then there's a nice tone generator/explorer section, and a whole series of superb and generally valid ripple tank simulations.

Physics is also the field in which two new BBC Publications packs campaign, both part of the *Science Topics* series. *Electromagnetic Spectrum* is the first physics adventure game I've come across. The quest is in three parts - a search of the Solar System (much fun but not much physics or intellect needed); telecommunication without proper radio; and analysis.

This is a brave, unusual program, and fun to run. It's very good, but like all adventures takes time. Will mid-secondary teachers be able to afford that time?

Electronics in Action is totally different - a hard work program that will fit into many contexts in science, technology and computing, but in each case will need a lot of teacher thought. Here one can simulate in detail the operation of a robot arm, a water tank or kettle (including programming in assembler); or set up and model one's own systems in a similar way. Another very novel package.

A number of publishers have recently stumbled on the idea of packing a tape of drill programs in with an existing revision book. Pan have several, including *Biology*, with Amstrad software, and *Physics* for the Commodore. (There are also Electron/BBC and Spectrum versions.)

As well as the book, each pack contains two cassettes, loading instructions, and a booklet of "diagnostic" objective tests for computer marking. The diagnostic tests, which are half the software provided, are surprisingly thorough. They make these packages significantly different from the competition.

RESOURCE is a consortium of i.e.s. determined to rescue something from the execution of South Yorkshire and Humberside region of the Microelectronics Education Programme. While the presentation of their material leaves something to be desired, and is not a "commercial" product, the initiative is welcome, as the three

Easy writer

My Word
South Yorkshire and Humberside Microelectronics Education Programme
BBC 40-track disc. £9.95 + 50p p.p.
RESOURCE, Exeter Road, Off Coventry Grove, Doncaster DN2 4PY.
To School Carefully
Make It Safe
Humberside County Council
Both programs on disc or cassette £17+VAT; individual programs £10+VAT
Farnell Educational Software, 31 Old Road West, Gravesend, Kent DA11

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Key words

Paul McGee on a new catalogue of educational resources

materials and BP films, and will be updated twice a year to give more rapid access to current information than was possible with paper systems. The reduced versions of the *SIR* programs are easy to use and a novice could learn enough from the user's guide in 10 minutes to be proficient at using a complete listing of the 1,232 keywords, authors and the words used in the titles of resources or films. *SIR* can provide this if necessary but beginners will appreciate its presence. The user's guide gives step-by-step instructions for setting up a stand-alone system and teaches by showing clear screen displays which are easily replicated at the keyboard. The speed on a 4802 is impressive and printing of any required record is accomplished by a single keystroke after the record has been displayed.
SIR adopts a standard bibliographic format which BPES uses to good effect in its use of keywords. The first field contains details of availability, while the second describes the medium. These are displayed in capital letters to distinguish them from content keywords. The next two keywords give

the age range, which separates teachers' materials, and curriculum areas. Then a string of keywords indicate the topics covered by the materials, others involved in the development, the Dewey Decimal Classification, and the price.

This is an excellent deployment of information technology which should be copied by others. The pack is useful for information technology or computer studies classes as an example of a simple working system, as well as to those who are interested in the resources.

The presentation could well serve as a model for those who wish to reorganize the rest of the *SIR* package from *PLM*, assuming that they have not had a one of RML's many offers, to develop their own keyword databases.

Well done BP!

THE TIMES EDUCATIONAL SUPPLEMENT - 7.3.86

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Applications are invited from suitably experienced teachers for the post of Deputy Headteacher and/or Second Master/Mistress. The post is a full-time position. Aided 13-18 mixed comprehensive school. The post holder will be responsible for the day-to-day running of the school and will report to the Headmaster. Further details available from the Headmaster at the school. Closing date: 21st March, 1986. An Equal Opportunity Employer. (17758) 130012

DEVON
Please see displayed advertisement on page 43. 130012 (1724)

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(12-18 co-ed. comp. Group 9)

For September well qualified and experienced teachers for the post of Deputy Headteacher and/or Second Master/Mistress (Deputy Head 9). The post arises from the promotion of post holder.

Post will offer opportunities for professional development for someone with initiative, foresight and a strong sense of responsibility. The successful candidate should expect to be involved in the development of the school and to be responsible for the day-to-day running of the school. Further details available from the Headmaster at the school. Closing date: 21st March, 1986. An Equal Opportunity Employer. (17758) 130012

SMITH SECONDARY SCHOOL
School Road, Smith, Gillingham, Kent ME13 9JG
No. on Roll: 670
Required for September, 1986. Second Master/Mistress. The post is a full-time position. Aided 13-18 mixed comprehensive school. The post holder will be responsible for the day-to-day running of the school and will report to the Headmaster. Further details available from the Headmaster at the school. Closing date: 21st March, 1986. An Equal Opportunity Employer. (17758) 130012

ESSEX
MOULSHAM HIGH SCHOOL
Essex, Essex
Required for September, 1986. Deputy Head of Upper School. The post is a full-time position. Aided 13-18 mixed comprehensive school. The post holder will be responsible for the day-to-day running of the school and will report to the Headmaster. Further details available from the Headmaster at the school. Closing date: 21st March, 1986. An Equal Opportunity Employer. (17758) 130012

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SHROPSHIRE COUNTY COUNCIL
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LIVERPOOL
DEPUTY HEAD TEACHER
Group 10/12, 840-214, 142

Required for September, 1986 or as soon as possible thereafter. The post is subject to Finance and Personnel Committee approval. Application forms (Staffing Form 73) and further details are available from the Director of Education, 14 R. Thomas Street, Liverpool L1 8JL. Please quote ref. no. P.T.M. 2241. To be returned to the Director of Education not later than 17th March 1986.

HAMPSHIRE
COUNCIL
ST. ANDREW'S AREA
OAKLANDS R.C. SCHOOL
Stokes Hill Road, Winchester, Hampshire.
13-18 mixed comprehensive school. No. on Roll: 1,310
Required for September, 1986. Second Master/Mistress. The post is a full-time position. Aided 13-18 mixed comprehensive school. The post holder will be responsible for the day-to-day running of the school and will report to the Headmaster. Further details available from the Headmaster at the school. Closing date: 21st March, 1986. An Equal Opportunity Employer. (17758) 130012

DEVON
Please see displayed advertisement on page 43. 130012 (1724)

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SECONDARY REMEDIAL & SPECIAL NEEDS continued

DUDLEY METROPOLITAN BOROUGH

Equal Opportunity Employer

THE MORN HILL SCHOOL
111 Morn Hill Road,
Wren's Nest Estate,
Dudley DY7 3DA
(13 - 16 co-ed, comp.
Group B)

For Summer Term, 1986 temporary teacher for SPECIAL NEEDS (Remedial Education) to cover maternity leave.

Details/application forms from (on receipt of £5 a.p.) and returnable to Headteacher as soon as possible. (17505) 131055

ENFIELD LONDON BOROUGH OF

ENFIELD SCHOOL
Churchbury Lane, Enfield, Midd. EN1 3HG
Required for September 1986, temporary teacher, co-ED, to teach in SENEDUATION.

For further details please refer to 'Education', English, Scale 1, (165370) 131052

ESSEX THE PLUMES SCHOOL

Chelmsford Road, Muldon CM9 5AH
Tel: Maldon 54681
(Roll: 2002)

TEACHER FOR SUPPORTIVE EDUCATION
Scale 1
Required September 1986. In addition to work within the department, some contribution to Pre-vocational courses, such as distribution, in the 4th and 5th Years will be expected. Application forms and further details from Headteacher (17505) a.s.e. 131052

KENT COUNTY COUNCIL

EDUCATION DEPARTMENT
FUNDRIDGE WELLS DIVISION
MASCALLS SCHOOL
Fondock Wood, Kent TW19 5LT

1330 Mixed comprehensive. Roll 1100
Required September 1986 RE-MEDIAL EDUCATION. To teach general subjects to years 9-10. An interest in Maths and/or Science would be an advantage. Well equipped, excellent career opening for newly qualified teachers. Apply to the Headmaster for details. SAE 131052 (13054) 13054

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By Subject Classification

Art and Design

Heads of Department

HOUNSLOW

Re-Advertisement
THE GREEN SCHOOL FOR BOYS
Bush Corner, Isleworth, Middlesex TW7 3BB
Tel: 01-848 2133

(Voluntary Aided Church of England)
Headteacher: Mrs. J.A. Barrett, B.Sc.
Required for September 1986 an imaginative, experienced and enthusiastic Head of Art and Craft, Scale 11.

A successful candidate will be expected to contribute to the development of the school's Art and Craft programme throughout the year. The school is a part of a consortium with a boys and a mixed school. The Headmaster is a Head of Department. Closing date: 17.3.86. Applications to the Headmaster at the school, enclosing a curriculum vitae, a stamped addressed envelope and the names of two referees. (17505) 131052

OLDHAM METROPOLITAN BOROUGH

EDUCATION DEPARTMENT
Hunt Lane, Oldham, Lancs. OL1 1JH
Required for September 1986, a lively, forward-looking teacher to take a large part of the Art and Design

Scale 2 Posts and above

KENT COUNTY COUNCIL

EDUCATION DEPARTMENT
WINTERS BOYS SCHOOL
Hunt Lane, Maldon, Essex. SA6 2JH
Tel: Maldon 54681

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

BUCKINGHAMSHIRE

MILTON KEYNES SCHOOL
Milton Keynes, Bucks. MK10 0JH
Tel: Milton Keynes 2111

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

CUMBRIA COUNTY COUNCIL

KIRKBY STEPHEN SCHOOL
Kirkby Stephen, Cumbria. LA13 4HA
Tel: 01924 4111

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

KENT COUNTY COUNCIL

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FUNDRIDGE WELLS DIVISION
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HAVERING LONDON BOROUGH OF

HAVERING SCHOOL
Havering, Essex. SS16 5LH
Tel: 01702 515155

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

BUCKINGHAMSHIRE

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Tel: Milton Keynes 2111

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CUMBRIA COUNTY COUNCIL

KIRKBY STEPHEN SCHOOL
Kirkby Stephen, Cumbria. LA13 4HA
Tel: 01924 4111

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

KENT COUNTY COUNCIL

EDUCATION DEPARTMENT
FUNDRIDGE WELLS DIVISION
MASCALLS SCHOOL
Fondock Wood, Kent TW19 5LT

1330 Mixed comprehensive. Roll 1100
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Craft, Design & Technology

Heads of Department

ESSEX

THE SANDON SCHOOL
Sandon, Essex. SS16 5LH
Tel: 01702 515155

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

BUCKINGHAMSHIRE

MILTON KEYNES SCHOOL
Milton Keynes, Bucks. MK10 0JH
Tel: Milton Keynes 2111

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

CUMBRIA COUNTY COUNCIL

KIRKBY STEPHEN SCHOOL
Kirkby Stephen, Cumbria. LA13 4HA
Tel: 01924 4111

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Application forms and further details from Headteacher (17505) a.s.e. 131052

KENT COUNTY COUNCIL

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Fondock Wood, Kent TW19 5LT

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GLOUCESTERSHIRE

EDUCATION DEPARTMENT
Gloucester, Glos. GL1 1JH
Tel: 01452 515155

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

BUCKINGHAMSHIRE

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A successful candidate will be expected to contribute to the development of the school's Art and Craft programme throughout the year. The school is a part of a consortium with a boys and a mixed school. The Headmaster is a Head of Department. Closing date: 17.3.86. Applications to the Headmaster at the school, enclosing a curriculum vitae, a stamped addressed envelope and the names of two referees. (17505) 131052

OLDHAM METROPOLITAN BOROUGH

EDUCATION DEPARTMENT
Hunt Lane, Oldham, Lancs. OL1 1JH
Required for September 1986, a lively, forward-looking teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

Application forms and further details from Headteacher (17505) a.s.e. 131052

BARNET LONDON BOROUGH OF

BARNET SCHOOL
Hendon Lane, Finchley, London N4 3JH
Tel: 01-445 1507

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

BUCKINGHAMSHIRE

MILTON KEYNES SCHOOL
Milton Keynes, Bucks. MK10 0JH
Tel: Milton Keynes 2111

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

CUMBRIA COUNTY COUNCIL

KIRKBY STEPHEN SCHOOL
Kirkby Stephen, Cumbria. LA13 4HA
Tel: 01924 4111

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

KENT COUNTY COUNCIL

EDUCATION DEPARTMENT
FUNDRIDGE WELLS DIVISION
MASCALLS SCHOOL
Fondock Wood, Kent TW19 5LT

1330 Mixed comprehensive. Roll 1100
Required September 1986 RE-MEDIAL EDUCATION. To teach general subjects to years 9-10. An interest in Maths and/or Science would be an advantage. Well equipped, excellent career opening for newly qualified teachers. Apply to the Headmaster for details. SAE 131052 (13054) 13054

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By Subject Classification

Art and Design

Heads of Department

HOUNSLOW

Re-Advertisement
THE GREEN SCHOOL FOR BOYS
Bush Corner, Isleworth, Middlesex TW7 3BB
Tel: 01-848 2133

(Voluntary Aided Church of England)
Headteacher: Mrs. J.A. Barrett, B.Sc.
Required for September 1986 an imaginative, experienced and enthusiastic Head of Art and Craft, Scale 11.

A successful candidate will be expected to contribute to the development of the school's Art and Craft programme throughout the year. The school is a part of a consortium with a boys and a mixed school. The Headmaster is a Head of Department. Closing date: 17.3.86. Applications to the Headmaster at the school, enclosing a curriculum vitae, a stamped addressed envelope and the names of two referees. (17505) 131052

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SECONDARY CRAFT DESIGN & TECHNOLOGY continued

HAMPSHIRE

HARLEY COMPREHENSIVE SCHOOL
Harley, Hampshire. RG1 1JH
Tel: 01494 515155

1330 Mixed comprehensive. Roll 1100
Required September 1986, a competent teacher to take a large part of the Art and Design

Application forms and further details from Headteacher (17505) a.s.e. 131052

BUCKINGHAMSHIRE

MILTON KEYNES SCHOOL
Milton Keynes, Bucks. MK10 0JH
Tel: Milton Keynes 2111

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KENT COUNTY COUNCIL

EDUCATION DEPARTMENT<

SIXTH FORM & TERTIARY continued

HAMPSHIRE
BARTON REVERILL COLLEGE
Cedar Road, Eastleigh
Open Access Sixth Form
and Tertiary Courses
C.V. names and addresses of
applicants should be sent to the
Principal, 140020
(17293)

SOMERSET
COUNCIL
BRIDGEMAN COLLEGE
Bridgwater, Somerset
For September 1986
LEADER GRADE 11 IN
GENERAL EDUCATION
(Please see under tertiary
education for further details)
(17293) 140020

STAFFORDSHIRE
STAFFORD COLLEGE
STAFFORD, STAFFORDSHIRE
Sixth Form and Tertiary
Courses
Please see under SECONDARY
SECTION - Computer Studies
(Scale 2 & above) 140020
(17211)

Scale 1 Posts

GLOUCESTERSHIRE
ROYAL FOREST OF DEAN
COLLEGE
Forest of Dean, Gloucestershire
Computing and business studies
also in secretarial studies
See Advertisement under
Colleges of Further Education
(17293) 140023

HAMPSHIRE
FARNBOROUGH SIXTH
FORM COLLEGE
Farnborough, Hampshire
Specialist Sixth Form
Comprehensive Mixed 16-19
Scale 1 posts
Required for September 1986
Teacher to teach Economics
and Business Studies
Interest in BTCC and PCCE
essential
Applications from PGCE
candidates welcome
Closing date 21st March
1986
Letter of application nominating two referees to the
Principal, (16531) 140023

SCHOOL PRINCIPAL WOODLANDS SCHOOL

Required for this residential special school (List A) in South
West Scotland. A degree with P.G.C.E. essential. A
Dip. Spec. Ed. or equivalent qualification, plus post-graduate
M.Ed. in special educational needs, an advantage. Relevant
experience in a promoted position most important.
Woodlands school is an established independent
educational resource which provides for the special needs of
54, emotionally disturbed pupils aged nine to seventeen.
The Principal is responsible to the Directors, and is required
to co-ordinate the educational and residential components
of staff management and support, educational and treatment
strategies, liaison with parents and L.A. referring and support
services, and for the overall administration of the school.
Staffing includes a senior management team of seven
promoted staff and a full complement of 28 professional staff.
The post is non-resident with remuneration according to
S.T.S.M. plus 10% (until settlement). In addition the Head
Teacher's special schools, and mediated allowances are
payable, with continuous superannuation contributions. The
school operates a 36 week curriculum year, with sixteen
week holiday per annum. Applications with C.V. and three
references to: The Directors, Woodlands School, Corrie
Road, Newton Stewart, Wigtownshire, DG8 5JF.
Phone: 0671-2480. (14320)

SURREY COUNTY COUNCIL

*FRINGE AREA LONDON ALLOWANCE £264 p.a. throughout
the County.
*Temporary housing may be available.
*Generous relocation expenses in approved cases.

DEPUTY HEADSHIP

LIMPSFIELD GRANGE SCHOOL
Bluehouse Lane, Nr Oxted RH8 0RZ. Group 3(S)
DEPUTY HEADTEACHER required for September 1986 for this
school for up to 48 girls of mainly secondary age, with a wide
range of special educational needs, including delicate health,
emotional vulnerability, minor physical handicaps, and specific
learning difficulties.
Applicants should have an enthusiastic and adaptable approach
to education and the possession of a qualification in Special
Education would be an advantage.
Salary scale - £7,887 - £10,743 p.a. Deputy Headteachers of
residential special schools receive a sum in respect of
organizational and supervisory duties currently £2634, plus
£1275 for residential Deputy Headteachers. Accommodation
arrangements will be determined at interview.
Application forms and further details from: County Education
Officer (T/P/ED), County Hall, Kingston-upon-Thames KT1
20A.
CLOSING DATE 21 March 1986. (14334)

Special Education

Headships

DEVON
DIRECTOR
KILWORTH COMMUNITY
SCHOOL

A well established therapeutic community, designated
by D.E.S. as a special school, providing a
specialist care for emotionally
disturbed and severely
behaviourally disordered
adolescents, ranging from
adolescence to young adults.
Applicants should possess
appropriate qualifications
and/or have experience
of working with adolescents.
This is a demanding
post requiring commitment
and enthusiasm.
Current salary £8,400
plus accommodation and
travel expenses.
For further details
please write to the Secretary,
Kilworth Community School,
Tavistock, Devon, Tel:
(0322) 2610. 160010
(16280)

WEST SUSSEX
HAYWARDS HEATH SIXTH
FORM COLLEGE
Haywards Heath, West Sussex RH16
12A
NOR 880 for September
1986, a suitably qualified
teacher to teach Business
Studies to 'O' and 'A' levels.
Applicants should be able to
teach one or more of the
following subjects: Economics,
Accounts and Commerce.
Forms and details from
the Principal, 140023
please. (17293)

WIGAN
METROPOLITAN BOROUGH
EDUCATION COMMITTEE
LEIGH COLLEGE
Leigh, Lancashire
Lecturer Grade 1 in Haldres
and Beauty.
For further details see
under Colleges of Further
Education, (17446) 140023

DEVON
ST. PAUL'S COLLEGE
Torrington, Devon
Headmaster required as soon
as possible. This is a residential
school for boys with
emotional and behavioural
problems. The successful
applicant will have both experience
and a qualification in the
specialized field. Scale 35 plus
allowances, accommodation
and travel expenses.
Letter of application with
three professional referees to
Principal, (17733) 160010

HERTFORDSHIRE
ST. LUKES S.N. (M)
SCHOOL
Crouch Hill Lane, Redbourne,
Hertfordshire SG8 7ET
Required for September 1986
Headmaster for this post.
16 with learning difficulties.
Recent experience of working
with this type of pupils is
essential.
Further particulars and
application form from the
Principal, Education Officer,
St. Albans AL1 3JZ.
Closing date March 31st
1986. (14028) 160010

SEFTON
METROPOLITAN BOROUGH
EDUCATION COMMITTEE
SOLVAY COLLEGE
Solvay Avenue, Liverpool
L23 5TH
(for children with moderate
learning difficulties)
HEADTEACHER required in
September 1986 for this
GROUP 6(S) school (estimated
roll 65).
Application forms and further
details, on receipt of a.s.e.,
from the Director of Education,
St. Albans AL1 3JZ.
Closing date 31st March
1986. (17755) 160010

**Deputy Headships
Second Masters/
Mistresses**

HERTFORDSHIRE
ST. LUKES S.N. (M)
SCHOOL
Crouch Hill Lane, Redbourne,
Hertfordshire SG8 7ET
Required for September 1986
Headmaster for this post.
16 with learning difficulties.
Recent experience of working
with this type of pupils is
essential.
Further details and application
forms available from the
Principal, (17755) 160010

Ealing

London Borough Education Service

St. Ann's School (Group 5(S)).
Springfield Road, Hanwell W7 3JP
Required for September 1986

DEPUTY HEAD TEACHER

Applications for the post of Deputy Head Teacher are invited
from well qualified and experienced teachers willing to lead
a young and enthusiastic team of staff at this special school
for 80 young people aged 14-19 years who experience severe
learning difficulties.
This is an excellent opportunity for a person with
imagination and enthusiasm to assist the Headteacher in
developing the curriculum and the organisation of the
school. The accommodation provides excellent facilities and
further developments are planned for the future.
Candidates who wish to visit the school before making
application should telephone the Headteacher Mr. John
Reynolds on 01-567 6251.
Salary Deputy Head Teacher Group 6(S), plus £1,038 London
Allowance.
Assistance with relocation expenses may be payable in
appropriate cases.
Application forms and further information available from
the Chief Education Officer, Hestley House, 79-81 Uxbridge
Road, Ealing W5 8SU (S.A.E.) to be returned by 31st March
1986. (17653) 160080

AVON COUNTY
Service for Special Educational
Needs, Education for the
Hearing Impaired
KENT
COUNTY COUNCIL
EDUCATION DEPARTMENT
ASHFORD DIVISION
GREYSTONES SPECIAL
SCHOOL
Hymn Road, Ashford, Kent
TN26 1JH
Required for September 1986
(Deputy Head Scale Group 7(S))
Required for September 1986
Specialist teacher with experience
and further advanced
qualifications in the field of
special responsibility to be
developed.
The post offers a challenging
and valuable experience in
the field of special education.
The successful candidate will
be responsible for the partially
hearing unit attached to King
Edward's Secondary School.
Yate.
Letters of application giving
full details of experience and
qualifications should be sent to
the Director of Education,
Avon as an Equal Opportunity
Employer considers applicants
on their suitability for the
post, regardless of sex,
race, religion or sexual
orientation. (17777) 160020

LONDON SW7
FAIRLEY HOUSE
DEPUTY HEAD
Diploma Advertisement
under Preparatory Schools;
Headships, (16547) 160015

OLDHAM
METROPOLITAN
BOROUGH

PARKDALE SCHOOL
St. Martin's Road, Piton
Oldham, Greater Manchester
M14 6JH
Required for September 1986
Teacher (Scale 2)
REES HOUSE RESOURCE
CENTRE
Comber Close, Dill Hill NW2
Tel: 01-450 911, Ext. 303
The post of Teacher has become
vacant in the Tissue
Unit. The successful candidate
will be responsible for the
teaching of mathematics at
that level.
Previous applicants will be
automatically considered.
Successful candidates will
be given a trial period of
three months. The successful
candidate will be responsible
for the teaching of mathematics
at that level.
The team comprises of one
senior teacher, a Social
Worker, a Teacher, with access
to an Educational Psychologist.
The main function of the
team is to provide a resource
for children with learning
difficulties, specifically
Family findings.
The teacher is expected to
work in a preventative/
rehabilitative way with young
people who have serious
educational difficulties. Emphasis
is on developing an individual
teaching method for each
pupil. The teacher will be
responsible for the teaching of
mathematics at that level.
Relevant experience,
qualifications and proven
organizational skills are
essential for this post.
Application forms (see
from the head at the school
returnable to him by 21st
March 1986.
An Equal Opportunity
Employer. (17504) 160015

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KENT
COUNTY COUNCIL
EDUCATION DEPARTMENT
ASHFORD DIVISION
GREYSTONES SPECIAL
SCHOOL
Hymn Road, Ashford, Kent
TN26 1JH
Required for September 1986
(Deputy Head Scale Group 7(S))
Required for September 1986
Specialist teacher with experience
and further advanced
qualifications in the field of
special responsibility to be
developed.
The post offers a challenging
and valuable experience in
the field of special education.
The successful candidate will
be responsible for the partially
hearing unit attached to King
Edward's Secondary School.
Yate.
Letters of application giving
full details of experience and
qualifications should be sent to
the Director of Education,
Avon as an Equal Opportunity
Employer considers applicants
on their suitability for the
post, regardless of sex,
race, religion or sexual
orientation. (17777) 160020

AVON COUNTY
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KENI
ASFORD SCHOOL
East Hill, Ashford TN24 8PB

Required in April, 1986
graduates to share in the
teaching of ENGLISH to Ad-
vanced level. This post, for
is, in the first instance, for a
term only, might become
permanent position.
Bursary Scale 1/2 according
to experience and qualifica-
tions.
Applications as soon as
possible with name, address
and telephone number of two
references to the Education
from whom further details may
be obtained. (16775) 18242

**KINGSTON
UPON THAMES**

Burblton Crescent, Kingston
Upon Thames
Required in September 1986:
fully qualified graduate to
share in the teaching of English
throughout the school. Willing-
ness to help with Drama is
essential.
enclosing curriculum vitae and
the names and addresses of two
references. (17402) 182484

LONDON EC2
CITY OF LONDON SCHOOL
FOR BOYS
Barbican, London EC2Y 8BB
Required in September 1986:
graduate of English to teach
throughout the school to high-
diversity entrance and School
post. Applications with full curri-

LONDON NW11
MENORAH GRAMMAR
SCHOOL
Beverley Gardens, London
NW11 9DG

LONDON SE31
DULWICH COLLEGE
London SE21 2D
Required from September 1986, a graduate to teach English to 11-13 year school children, to assist in the school becoming one of a department of specialists. Ability to assist with games or other extra-curricular activities will be an advantage. Dulwich has its own very large grounds which are across of Burghley Park, offering a wide range of facilities in which to place on which will be according to suit and experience. Accommodation available if required. Applications by letter to the Headmaster, as soon as possible, will be considered.

LONDON W8
ATYMER UPPER SCHOOL
ing Street, London W8 SLR,
Independent, HMC, 1000
ys)
anted for September 1986 a
graduate to teach ENGLISH.
ary Burnham plus London
allowance on scale appropriate
to experience. Single
competition might be available
during term time.
Applications, together with
il curriculum vitae and the

MANCHESTER
WILLIAM HULME'S
GRAMMAR SCHOOL
St. Andrew's Park, Manchester
M13 9PR
MC/Independent)
required for September well
qualified graduates to teach EN-
GLISH throughout the School
University entrance level.
Salary according to experience
and qualifications. Ability to
work with out-of-school activi-
ties will be an advantage. The
successful candidate will be
employed on a full-time basis and
become Co-educational in
charge of the school.
Applications with C.V. and
names and addresses of two
references, to Headmaster as
soon as possible.
335) 182424

MERSET
NO. 5 SCHOOL
ton, Somerset
for September 1986 a
diocese to teach English at
levels in a lively depart-
t. Some History teaching
it be available. Ideal
occasionally for an energetic
new graduate to be involved
full school life. Ability
in other areas names,
ural, pastoral a definite
applications as soon as
sible with curriculum liter-
names and telephone num

unmaster, King's School,
ton, Somerset BA10 0ED.
773) 183424

INDEPENDENT EDUCATION continued

CROYDON

OLD PALACE SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a Graduate with a minimum of 5 years' experience in the teaching of Science, Mathematics and Physics to Head of the Biology Department. The subject is compulsory throughout the school to O-level. This is a strong team and the person appointed would be expected to teach to A level and to be a good organizer and to be able to handle the changes required by the new C.S.E. syllabus. The salary will be £10,000 plus 4% for a qualified and experienced teacher. Applications with the names and addresses of two referees should be sent to the Headmaster, Old Palace School, Old Palace Road, Croydon, Surrey CR9 1AX (16709) 184918

ESSEX

FELTBY SCHOOL
A well-qualified and experienced graduate is required to be Head of the BIOLOGY Department from September 1986. Experience of having taught the new syllabus will be an advantage. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Feltby School, Feltby, Essex CM9 1AA (194358) 184918

LONDON

JAMES ALLEN'S BOYS' SCHOOL
A well-qualified and experienced graduate is required to be Head of the BIOLOGY Department from September 1986. Experience of having taught the new syllabus will be an advantage. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, James Allen's School, 100, Strand, London WC2R 1JF (184918) 184918

NOTTINGHAMSHIRE

NOTTINGHAM COLLEGE
(HMC 585 pupils aged 11 to 18 of whom 240 are boarders. Co-educational Sixth Form of 600)
Required for September 1986, as the result of promotion, a well-qualified and experienced graduate to teach Biology to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Nottingham College, Nottingham NG1 6BB (184918) 184918

WEST YORKSHIRE

WAKEFIELD GIRLS' HIGH SCHOOL
Required for September 1986 a well-qualified and experienced graduate to teach Biology to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Wakefield Girls' High School, Wakefield WF1 1AA (184918) 184918

Other Assistants

BERKSHIRE
DOLPHIN SCHOOL
A well-qualified and experienced graduate is required to be Head of the BIOLOGY Department from September 1986. Experience of having taught the new syllabus will be an advantage. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Dolphin School, Reading RG1 1AA (184918) 184918

DARTINGTON HALL SCHOOL

TOTNES, DEVON TQ9 6EB
Tel. 0803 862567
(Co-educational, Day/Boarding, 10-18)

PHYSICS TEACHER

required in September 1986 to teach O and A levels (Nuffield at present) and some integrated science. A Chemistry and a Biology teacher complete the Department. Strengths in computing, electronics (especially for the Performing Arts), and/or C.D.T. welcome. Experience preferred but not necessarily decisive. Probably Scale II. Full boarding school involvement essential (residential option for single person encouraged; low fees for those whose children join the school). This post provides an unusual opportunity to share in the rebuilding of a famous school. It will suit those who refuse to separate life and education. Applications by letter - no forms - with c.v. and two referees to the Headmaster, from whom full details are available. (184918) 184918

BRECON

CHRIST COLLEGE
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Christ College, Brecon, Powys LD3 5AD (184918) 184918

BUCKINGHAMSHIRE

ST. MARY'S SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, St. Mary's School, Old Palace Road, Croydon, Surrey CR9 1AX (16709) 184918

CAMBRIDGESHIRE

THE KING'S SCHOOL
A well-qualified and experienced graduate is required to be Head of the BIOLOGY Department from September 1986. Experience of having taught the new syllabus will be an advantage. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, The King's School, Cambridge CB2 3RQ (184918) 184918

CAMBRIDGE

THE PERSE SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, The Perse School, Cambridge CB2 3RQ (184918) 184918

CORNWALL

TRURO SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Truro School, Truro, Cornwall TR1 1AA (184918) 184918

DARTINGTON HALL SCHOOL

TOTNES, DEVON TQ9 6EB
Tel. 0803 862567
(Co-educational, Day/Boarding, 10-18)

PHYSICS TEACHER

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BUCKINGHAMSHIRE

ST. MARY'S SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, St. Mary's School, Old Palace Road, Croydon, Surrey CR9 1AX (16709) 184918

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HERTFORDSHIRE

ST. EDMUND'S COLLEGE
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, St. Edmund's College, Hertfordshire SG1 1AA (184918) 184918

HULL

HYMERS COLLEGE
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Hymers College, Hull HU1 1AA (184918) 184918

DORSET

ST. ANTHONY'S LEWES
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, St. Anthony's Lewes, Dorset DT9 6BN (184918) 184918

EAST SUSSEX

EAST SUSSEX COLLEGE
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, East Sussex College, East Sussex BN1 1AA (184918) 184918

ESSEX

THORPE HALL SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Thorpe Hall School, Essex CM9 1AA (184918) 184918

GLOUCESTERSHIRE

WESTONBIRT SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Westonbirt School, Gloucestershire GL1 1AA (184918) 184918

HAMPSHIRE

THE RICKMANSWORTH SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, The Rickmansworth School, Hampshire RG1 1AA (184918) 184918

HERTFORDSHIRE

ST. EDMUND'S COLLEGE
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, St. Edmund's College, Hertfordshire SG1 1AA (184918) 184918

LOUGHBOROUGH

LOUGHBOROUGH HIGH SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Loughborough High School, Loughborough LE11 1AA (184918) 184918

SURREY

WELL CASTLE SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Well Castle School, Surrey GU1 1AA (184918) 184918

MANCHESTER

MANCHESTER HIGH SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Manchester High School, Manchester M1 1AA (184918) 184918

MERSEYSIDE

ST. ANSELME'S COLLEGE
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, St. Anselme's College, Merseyside L43 1UQ (184918) 184918

NORTHAMPTONSHIRE

OUNDS SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Ounds School, Northamptonshire NN1 1AA (184918) 184918

SURREY

WELL CASTLE SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Well Castle School, Surrey GU1 1AA (184918) 184918

LOUGHBOROUGH

LOUGHBOROUGH HIGH SCHOOL
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SURREY

WELL CASTLE SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Well Castle School, Surrey GU1 1AA (184918) 184918

SURREY

WELL CASTLE SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Well Castle School, Surrey GU1 1AA (184918) 184918

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WELL CASTLE SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Well Castle School, Surrey GU1 1AA (184918) 184918

SUSSEX

BRIGHTON COLLEGE
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Brighton College, Brighton BN1 1AA (184918) 184918

TYNE & WEAR

THE KING'S SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, The King's School, Tyne & Wear NE1 1AA (184918) 184918

WORCESTERSHIRE

WYVERN GIRLS' COLLEGE
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Wyvern Girls' College, Worcestershire WR14 3AA (184918) 184918

THE KING FAHAD ACADEMY

Acton, London
Well-qualified
TEACHERS
required for September '86:

1. GIRLS' UPPER SCHOOL TO 'O' AND 'I.B.' levels in:

(a) Science/Computer Studies, (b) Home Economics/Art.
2. BOYS' UPPER SCHOOL TO 'O' AND 'I.B.' levels in: (a) Mathematics, (b) P.E., (c) English. All posts with one or more to 'O' level of History, Geography, Chemistry, Biology and Music if possible.
3. GIRLS' UPPER & LOWER SCHOOLS: Remedial Mathematics/Music.
4. Teachers for ESL at all levels.
The Academy opened in 1985 and is growing rapidly. For further details, send s.a.e. to The Bursar, The King Fahad Academy, Bromway Avenue, Acton, London W3 7HD specifying the post of interest. (184918) 184918

GLoucestershire

WESTONBIRT SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Westonbirt School, Gloucestershire GL1 1AA (184918) 184918

Other than by Subject

Classification
Heads of Department

LONDON W8

LANSOWNE TUTOR
7-9 Palace Gate, London W8 5LS
Applications are invited for the following post for September 1986.
HEAD OF ARTS AND MODERN LANGUAGES
The successful appointee will be responsible for running a department of approximately 150 students in 'O' and 'A' level courses. Applicants must be graduates with considerable experience in the teaching of English, History, Geography, and Modern Languages.
Salary will be determined by qualifications and experience, in the range of £10,000 to £12,000 p.a.
C. Applications, with full curriculum vitae and names of two referees, should be addressed to the Principal, 185618

SWITZERLAND

AGLON COLLEGE
In the Swiss Alps requires a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Aglon College, Switzerland CH-1111 (184918) 184918

GREENHILL HOUSE

Sherborne School Study Centre
Required for September, 1986
RESIDENTIAL TEACHER OF ENGLISH
RESIDENTIAL TEACHER OF MATHEMATICS
Greenhill House is a specialist unit which prepares overseas boys for admission to Independent schools through Common Entrance or G.C.E. 'O' Level. Classes are small (average six boys). Candidates must be fully qualified, though not necessarily experienced, and should be enthusiastic about teaching English/Mathematics to boys with little or no knowledge of English at the outset, and must also be prepared to participate fully in the extra-curricular and supervisory side of boarding-school life.
Applications with c.v. and names of two referees to The Warden, Sherborne School Study Centre, Greenhill House, 6 The Green, Sherborne DT9 3HX. (184918) 184918

PORTSMOUTH GRAMMAR SCHOOL

H.M.C. INDEPENDENT DAY SCHOOL
CO-EDUCATIONAL SIXTH FORM
seeks for September

Well qualified teacher of C.D.T.

for expanding department with particular interest in technology to G.C.S.E. The successful candidate must have knowledge of electronics and an interest in project work and would be responsible for a new workshop equipped for this subject. A willingness and ability to help with games or outdoor activities would be an advantage.
Well qualified graduate to teach
ECONOMICS
and share in the teaching of **POLITICS AND GOVERNMENT** the Sixth Form to 'A' level and O level. This is a new post created by departmental expansion. A real interest in assisting with games would be a strong recommendation.
All the above positions carry Burnham scale plus P.S.E. Allowances. Apply by letter, with full c.v. and names and addresses of two referees, to the Headmaster, Portsmouth Grammar School, High Street, Portsmouth PO1 2LN. (184918) 184918

THE KINGSLEY SCHOOL

LEAMINGTON SPA, WARWICKSHIRE CV32 5RD
Tel: 0926 25127
Girls' Independent day/boarding school - 418 pupils, aged 4-18.
HEAD OF JUNIOR DEPARTMENT
Required for September, 1986, well-qualified and experienced teacher as Head of the Junior Department of this school.
There are approximately 90 girls, aged 4-11, in the Junior School.
Salary: Burnham Scale.
Applications, including the names, addresses and telephone numbers of 2 professional referees, should be sent to the headmistress. (184918) 184918

DEVON

BUCKLAND HOUSE, SHEBBEAR COLLEGE
Required for September, 1986, a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Buckland House, Devon PL1 1AA (184918) 184918

AVON COUNTY

MONKTON COMBE JUNIOR PREPARATORY SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Monkton Combe Junior Preparatory School, Avon BA2 7ET (184918) 184918

LANCASHIRE

QUEEN MARY SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Queen Mary School, Lancashire M1 1AA (184918) 184918

LEICESTERSHIRE

LOUGHBOROUGH ENDOWED SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Loughborough Endowed School, Leicestershire LE11 1AA (184918) 184918

BERKSHIRE

GABRIEL'S SCHOOL
(Independent Day School 750 girls)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, Gabriel's School, Berkshire RG1 1AA (184918) 184918

ROME, ITALY

THE PERSE SCHOOL
(HMC School for 500 boarding boys and 100 day boys)
Required for September 1986 a well-qualified and experienced graduate to teach Physics to O and A level with some Junior Science. The successful candidate will be expected to contribute to the school's development in the following areas: Curriculum, Staff, Finance, and Administration. Further details may be obtained from the Headmaster, The Perse School, Rome, Italy 00100 (184918) 184918

ST BEDE'S COLLEGE

Alexandra Park, Manchester M16 8HX
061-226-3323
A Catholic Grammar School of 870 pupils including 100 in the Preparatory Department. The Sixth Form is co-educational and from September girls will also be admitted at age 11.
HEAD OF PREPARATORY DEPARTMENT
The Governors invite applications from suitably qualified and experienced persons, who must also be practising Catholics, to lead this thriving and expanding department within the College. The post will become vacant from

PREPARATORY SCHOOLS

OXFORDSHIRE

A teacher is needed in September 1986 to teach all subjects to seven-year-olds in the introductory class to the school. The successful candidate will be required to take charge of the school and to be responsible for the supervision of the school. Salary will be on the appropriate point of the Burnham Scale 1. Accommodation can be provided for a single person. Applications, in writing, to the Headmaster, Christ Church School, 100, St. Andrew Street, Oxford OX1 1DW. (17209) 1 205624

READING

THE ABBEY SCHOOL

JUNIOR DEPARTMENT

Required in September 1986, a qualified member of staff to take charge of a form of 7 to 8 year-olds. Burnham Scale. Please apply to the Headmaster with full curriculum vitae. (16977) 205624

READING

THE ABBEY SCHOOL

PREPARATORY DEPARTMENT

Required in September 1986, a qualified member of staff to take charge of a form of 7 to 8 year-olds. Burnham Scale. Please apply to the Headmaster with full curriculum vitae. (16977) 205624

NOTTINGHAM

NOTTINGHAM HIGH SCHOOL. Two well-qualified Junior School teachers. Burnham Scale 1. Required for September 1986, either for a class of 7-8 year olds and the other of 7-8 year olds. An interest in English and Drama plus a willingness to share teaching of other subjects and to take part in extra-curricular activities would be an advantage. Apply by letter (no forms) enclosing a curriculum vitae and copies of two referees to the Headmaster, Nottingham High School, 100, St. Andrew Street, Nottingham NG1 4JH. (17113) 205624

STAFFORDSHIRE

SMALLWOOD MANOR

(DENSTONE COLLEGE PREP.)

Woodstock School

Required for September 1986

a well qualified and enthusiastic

teacher of English and

Mathematics for 7 and 8 year

olds. Ability to coach girls'

tennis would be an advantage.

Full commitment and involve-

ment in the out of school

activities, together with a share of

boardings available.

Accommodation available.

Letters of application,

together with a full curriculum

vitae, the names and addresses

of two referees should be sent to

the Headmaster, Smallwood Man-

or, Woodstock School, Stafford-

shire, ST14 5NS. Tel: 01829

205624

Lothian Region
Colleges of
Further Education

ESK VALLEY

PRINCIPAL/PRINCIPAL DESIGNATE

Esk Valley College offers a wide range of full-time and part-

time courses/programmes at craft and technician levels and

has a significant involvement in MSC programmes in general

and YTS in particular. The College is currently a Group 6

College in terms of the Scottish Teachers' Salaries

Memorandum 1980 and the post carries a salary of £22,287.

From 1 August 1987, Esk Valley College will operate from

two major sites viz. Esk Valley Campus at Dalkeith and Leith

Nautical College in Milton Road, Edinburgh under a unitary

management arrangement on its transfer to the ownership of

the Regional Council. Initially the new College will probably

be group 6 in terms of the Scottish Teachers' Salaries

Memorandum and the Principal's salary with effect from 1

August 1987 will be circa £23,700.

Applicants for this post must hold good academic and

professional qualifications and have successful experience at

a senior level - preferably at Principal/Deputy Principal level.

In addition, the ability, enthusiasm and drive to launch a new

College and collaborate with other Regional Colleges and

schools will be required.

Application forms and further particulars from:

Head of Personnel

Department of Education

Lothian Regional Council

40 Torphichen Street

EDINBURGH EH3 8JJ.

Telephone: 031-229 9186 extension 2280.

to whom completed forms should be returned by Tuesday,

25 March 1986. (14003)

LONDON BOROUGH OF BRENT

WILKESDEN COLLEGE OF TECHNOLOGY

Danzel Road, NW10

PRINCIPAL

Burnham Group 7 - Salary £24,516 - £25,436 +

£1,038 London Allowance

The Governors invite applications for the post of Principal of

Willesden College of Technology from September 1986, to succeed

Dr A K Barnard, Principal since September 1974, who is to retire.

The successful candidate will be academically well-qualified, and

will have taught in the Further Education sector. Experience at

senior management in Further or Higher Education level, and of

leading and motivating a large number of staff, is essential, as is

experience of curriculum development, implementation and

evaluation, and a familiarity with current educational issues.

The successful candidate will demonstrate a thorough grasp of and

commitment to the multi-cultural and gender equality strategies of the

Council. The Governors are looking for someone with the ability to

make the college responsive to the varied needs of the local and

regional communities; and to give a clear and firm lead in the

implementation of education policies and recruitment practices

aimed at achieving Equal Opportunity in Education. The successful

candidate will be expected to play an important role in identifying the

developmental needs of the college over the next 10-20 years.

Application forms and further details of the post can be

obtained from the Chief Administrative Officer, Willesden

College of Technology, Danzel Road, London, NW10 2JD. Tel: 01-451 5611 - returnable to him by 30 March 1986.

Brent is an equal opportunity employer.

Brent is fundamentally committed to multi-cultural education. (14003)

SCOTLAND

EAST COAST OF

SCOTLAND

LATHALLAN SCHOOL

By Montrose, Angus DD10

OHN

Required for September

1986 a teacher (full time)

sympathetic, initiative and

commitment to take a lead

in the teaching of other

subjects and to take part in

extra-curricular activities

will be an advantage. Salary

will be on the appropriate

point of the Burnham Scale 1.

Accommodation can be

provided for a single person.

Applications, in writing, to

the Headmaster, Lathallan

School, 100, St. Andrew

Street, Montrose, Angus

DD10 1JH. (17113)

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Colleges of Further Education

Directors, Principals and Vice Principals

SOUTH DEVON

TOR BUSINESS COMPUTER

CENTRE

Required from 1st April 1986

DEPUTY DIRECTOR

LECTURER

(Temporary 1 year

Appointment)

Salary Range: £11,753 to

£15,753 (Scales 1 to 14)

(Burnham FE Report)

The successful candidate

should have a Business Ad-

ministration Degree or equiv-

alent qualification and be able

to teach at least two modern

languages from the following:

French, German, Spanish, Por-

tuguese, Italian, Japanese, etc.

He/she should have good

management and adminis-

tration experience in a com-

mmercial environment. The

Centre offers high quality com-

puter training to business clients.

It is equipped with the latest

microcomputer and com-

munications systems. The

application forms contact the

Principal, Tor Business Com-

puter Centre, South Devon

College, Newton Road, Torquay

TQ1 1JH. Tel: 01803 517519.

Retainable by 31st

March 1986 (SAB please).

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205



Lecturer Grade I in

PHOTOGRAPHY/GRAPHIC DESIGN

Applications are sought from teachers with training in Art/Design, with a specialization in Photography. You will be teaching students taking GCE 'O' and 'A' levels elements of the Art Foundation course and non vocational short courses for adults.

Lecturer Grade I in

SPECIAL NEEDS

Applications are sought from an experienced and qualified teacher to contribute to the Special Needs Provision for young people and adults in the Corby/Kettering area. You must be sympathetic to the needs of people with learning difficulties and those with physical handicaps who wish to extend their general education and develop work related skills.

Lecturer Grade I in

BEAUTY THERAPY

Suitably qualified/experienced staff are invited to apply for this post to teach on a course leading to the award of the City and Guilds Beauty Therapy Certificate. Applications will be welcome from non-teachers but you must have experience in Beauty therapy techniques including electrolysis & body correction.

Salaries: Grade I £8,207 - £11,037 (under review)

For further details and application forms for any of the above posts, please contact:-

The Principal's Secretary,
Tresham College, St Mary's Road, KETTERING, Northants.
Tel: Kettering 85353 ext. 205

(14322)

EDUCATION DEPARTMENT

LONDON BOROUGH OF RICHMOND UPON THAMES

RICHMOND UPON THAMES COLLEGE

WANTED FOR 1st September 1986 L II TO TEACH 'A' LEVEL IN TECHNOLOGY

Salary: £8,076 - £12,945 plus £878 Outer London Weighting Allowance per annum

An opportunity exists to teach the Cambridge 'A' level in Technology at London's first Tertiary College. The course will be introduced in September as part of Richmond's T.V.E.I. scheme.

The successful applicant will teach up to 19 hours in GCE Technology and Design of Technology courses.

All post-16 full-time education in the London Borough of Richmond upon Thames is concentrated in the Richmond upon Thames College, and this post offers an exciting opportunity to teach the most able among the 80 or so students currently taking 'O' level Modular Technology as part of the T.V.E.I. scheme in the Borough's 8 secondary schools.

Further particulars and application forms, returnable within two weeks of the date of advertisement, may be obtained from the Administrative Assistant, Personnel Section, Richmond upon Thames College, Egerton Road, Twickenham TW2 7SA.

(Footleap self-addressed envelopes only) (12415)

CITY OF COVENTRY

Department of Social Care

Lecturer I - Sociology

Ideally candidates should possess an Honours Degree in Sociology, a teaching qualification and some experience of teaching post-16 students.

Salary scale (under review) £8324 - £11247 to commence duties on 1st September 1986.

Further particulars and application form are available from the Principal, Tile Hill College of Further Education, Tile Hill Lane, Coventry CV4 9SU. Telephone Coventry 481444 ext 224, to whom applications should be returned by Friday 21st March 1986.

(15785)

Tile Hill College of Further Education

COLLEGES OF FURTHER EDUCATION continued

GRAMPIAN REGIONAL COUNCIL

MORAY COLLEGE OF FURTHER EDUCATION

LECTURER B - GENERAL STUDIES

Social Work and Social Services

Applicants should have relevant University Degree or C.G.E.W. with experience in a practical social work setting. Teaching, lecturing or study support experience an advantage.

Main teaching required is as part of a team offering 1st National Certificate Modules and Social Care with the Department of General Studies.

Salary Scale: £8,374 - £11,676.

Application forms and further details from Director of Education, 2nd Floor, Admin Building, Woodhill Road, Aberdeen AB9 8LU with whom applications (9 copies) should be lodged by March 24, 1986. 230026

Further details and application forms for any of the above posts, please contact:-

The Principal's Secretary,
Tresham College, St Mary's Road, KETTERING, Northants.
Tel: Kettering 85353 ext. 205

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COLLEGES OF FURTHER EDUCATION continued

KENT COUNTY COUNCIL

CANTERBURY COLLEGE OF TECHNOLOGY

LECTURER II IN CIVIL ENGINEERING

Design of Reinforced Concrete and Timber Structures

Applicants should have relevant University Degree or C.G.E.W. with experience in a practical civil engineering setting. Teaching, lecturing or study support experience an advantage.

Main teaching required is as part of a team offering 1st National Certificate Modules and Social Care with the Department of General Studies.

Salary Scale: £8,374 - £11,676.

Application forms and further details from Director of Education, 2nd Floor, Admin Building, Woodhill Road, Aberdeen AB9 8LU with whom applications (9 copies) should be lodged by March 24, 1986. 230026

Further details and application forms for any of the above posts, please contact:-

The Principal's Secretary,
Tresham College, St Mary's Road, KETTERING, Northants.
Tel: Kettering 85353 ext. 205

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Further details and application forms for any of the above posts, please contact:-

Posts Overseas

Oman

Muscat English Speaking School (Primary)
Posts 1-2: Class Teachers
Post 3: Class Teacher with experience of teaching games

The Muscat English Speaking School (Primary) provides a British-type education for children aged 4-11 of many nationalities. The school has new purpose-built premises in a well established residential area.

Duties: to teach the full range of primary school subjects. Post 3 also to teach games.

Qualifications: Candidates should have a UK teaching certificate and a minimum of three years' UK primary school experience, and should be UK citizens aged 25 to 35 with a British educational background, either single or a married teaching couple. A driving licence is essential and overseas teaching experience an advantage.

Salary: on a scale OR 3540 - 7560 per annum free of local tax, plus overseas living allowance OR 80 per month and car allowance OR 40 per month (£1-OR 0.55 approx).

Benefits: free furnished accommodation, setting-in allowance OR 100, medical insurance contribution (BUPA), terminal gratuity or contribution to superannuation scheme as appropriate, passage-paid annual leave, baggage allowance.

Contract: two-year local contract, guaranteed by the British Council, from 1 September 1988, renewable by mutual agreement.

Closing date for applications: 4 April.

Reference: 85 A 108-111T

The following posts are funded under Britain's Aid Programme to developing countries:

Cameroon
Mathematics Teaching Adviser
Ministry of National Education
South West Province, Buea

Duties: Initially to conduct a teachers' needs analysis and investigate the possibility of establishing centres of excellence to use as models; subsequently to organise and run in-service teacher training sessions and produce teaching guidelines and related materials; to collaborate on syllabus and teacher development; to advise the Ministry on examination development.

Qualifications: Candidates, preferably without school age children at post, must be UK citizens with a British educational background. They must have a degree in Mathematics, a Secondary Teacher Training Certificate, and at least 5 years teaching and teacher training/Local Authority experience. MED in Mathematics desirable. Overseas experience and the ability to drive essential.

Salary: £10,330 - £14,925 pa.
Overseas Allowance: £3421 - £8498 pa depending on salary level and marital status.
Closing date: 26 March 1988. Post tenable from September 1988.
Reference: 85 K 97T

Nepal

Head of Mathematics
Budhanilkantha School

Budhanilkantha School, 7 miles from Kathmandu, is an English-medium boys' boarding school with about 600 Nepalese pupils aged 9-19. The Headmaster and 7 other staff have been recruited by the British Council.

Duties: to teach Mathematics and Computer Studies at any level in the school, with emphasis on the Nepal School Leaving Certificate (age 16 years), Cambridge 'O' level Mathematics syllabus and Additional Mathematics, plus the 'A' level Mathematics 2-year syllabus commencing in February 1988; to act in an advising capacity for the Mathematics Department; to carry out some residential and extra-curricular duties, as a member of a House pastoral team.

Qualifications: candidates, preferably male, aged 30-45, must be UK citizens with a British educational background. They should have a first degree in Mathematics, a PGCE and five years' experience at Head of Department level overseas. Some experience of computer education is also required. Boarding school experience is desirable.

Salary: £8,772 - £12,069 per annum.
Overseas Allowance: nil.
Closing date: 26 March 1988. Post tenable from June 1988 or asap.
Reference: 85 K 98T

For further details and an application form please write, quoting the post reference number to: Overseas Educational Appointments Department, The British Council, 80-81 Tottenham Court Road, London W1P 0DT.

The British Council

ENGLISH LANGUAGE INSTRUCTOR

Jubail

Saudi Arabia

A substantial petrochemicals manufacturing company, based in the new Industrial City of Jubail (East Coast), has a requirement for an English Language Instructor, who will join the training department and will be responsible for teaching English to speakers of other languages.

Candidates will be graduates in English, with a post-graduate qualification (Masters degree preferred) in TESOL. In addition at least four years' actual experience in teaching ESL (two of which should have been in the Middle East) is required, and preference will be given to candidates with direct experience in the petrochemical/refinery/process industries.

Interviews are scheduled soon, therefore interested candidates are requested to write, enclosing a full resume of career and salary history to date, specifying availability, and quoting a contact telephone number, to:

A.T.S. Recruitment Company,
 Merevale House, Parkshot,
 Richmond, Surrey TW9 2RP

OVERSEAS POSTS continued

ITALY
 Governare for excellent family. Two children. Also teach. Home English. Tel: 01-946 5788 460000 (17844)

ITALY
 ROME, ITALY
 1834 An international day school with English curriculum requires for September 1988 well qualified teachers, preferably with two years experience, for the following posts:
 1. Biology to 'O' and 'A' level.
 2. Junior teacher for various ground class.
 Applications by express letter giving curriculum vitae, tel. no., names, addresses and tel. no. of three referees to: The Chairman, The New School, Via Della Camilleucia 66, 00185 Rome, Italy.
 Closing date for applications 24th March. Interviews will be held on 27th March. Candidates selected for interview will be informed by 28th March. (17611) 460000

KENYA
 The GCE London A-level. Teacher preferred under 35 and single or recent photo. Send cv, contact telephone number to The Director, P.O. Box 14914, Nairobi 10010. Salary K25,000. C.V. photo, 14914 STD phone 60717 Nairobi. 460000 (18054)

KUWAIT
 Teachers, graduates with TEFL Qualification. Send cv, contact telephone number to The Director, P.O. Box 14914, Nairobi 10010. Salary K25,000. C.V. photo, 14914 STD phone 60717 Nairobi. 460000 (18054)

MEXICO CITY
 THE LUTHER SCHOOL
 Mexico City
 This growing bi-cultural school of 450 students, recognised by both the British and Mexican Governments, requires for September 1988:
 1. Head of Mathematics. O and A level.
 2. Teacher of Chemistry. Initially to level to play to A level. Possible Headship.
 3. Teacher of Physics. Initially to O level to play to A level. Computing skills an advantage. Possible Headship.
 4. Teacher of History. O and A level.
 5. Teacher of Economics. A level. History subsidiary an advantage.
 Desires to learn Spanish and will accept local staff. Important for all posts.
 7. Teacher of English. Return flight, settling in allowance, Housing subsidy. Own salary.
 Apply with two references to: The British Council, Stanhope Road, Craydon, Surrey CR8 5NR. (17626) 460000

NETHERLANDS
 VAN DER PUTTYCEUM
 International Day School
 Applications are invited from well qualified experienced teachers to be re-located to a new running 'Foundation year' course in English as a foreign language, starting in August 1988. The course will be run in close liaison with other subject teachers. It is designed for pupils whose command of English is inadequate to participate in the curriculum leading to the G.C.E. 'O' level.
 Qualifications required: a native command of English, relevant degree, specialist TEFL, specialist teaching qualification and proven experience.
 Applications to and further details from: Van der Puttyceum, C/O 5 Broomfield Road, Baginbun, Surrey SDC1 (17957) 460000

PORTUGAL
 PRINCE HENRY INTERNATIONAL COLLEGE
 Vale Do Lobo, Alentejo, Algarve
 A Co-educational day school, pupils aged 3 to 16 years, requires for September, 1988:
 SENIOR SCHOOL - English Literature/English Language/Junior School - 2 teachers for the 6 to 10 yr. group.
 Teachers able to offer extra-curricular activities will be favourably considered (e.g. Music, Dance, Drama, etc.).
 Candidates must be qualified teachers. Married couples would be welcome. One year contract. Salary with travel and Local Authority experience.
 Applications with curriculum vitae and photograph to be sent to: The Principal, Prince Henry International College, Vale Do Lobo, Alentejo, Algarve, Portugal. 460000

SPAIN
 ENGLISH Young TEFL teacher required to start immediately. Send recent photo. Write to: A.T.S. Recruitment Company, 16884, Richmond, Surrey TW9 2RP. (16884) 460000

SPAIN
 Vacancies for EFL teachers. Send cv, contact telephone number to The Director, P.O. Box 14914, Nairobi 10010. Salary K25,000. C.V. photo, 14914 STD phone 60717 Nairobi. 460000 (18054)

MINISTRY OF DEFENCE SERVICE CHILDREN'S EDUCATION AUTHORITY

Vacancies for Secondary Schools

West Germany
 September 1986

S1. Computer Studies — Head of Department —

Scale 3 — Kent School, Hostert
 Experienced graduate required, in September or earlier if possible, to lead a successful and popular department. He/She will be required to teach computer studies to all ages and abilities up to 'A' level, and continue the development of CAL throughout the entire curriculum.

S2. Mathematics —

Scale 1 — Kent School, Hostert
 A graduate required to teach subject to 'A' level. Candidates should have experience of teaching to a wide range of abilities within age groups 11-18.

S3. Modern Languages —

Scale 1 — Kings School, Gutersloh
 A qualified and experienced teacher required to teach Modern Languages throughout the school. Applicants should be able to offer both French and German to CSE level and preferably one of these subjects to 'O' level. The opportunity for 'A' level work is available and there are strong links with the local community.

CONDITIONS OF SERVICE

Salary is in accordance with the current Burnham scales. In addition, the London Area Allowance currently £1,038 per annum is payable. Superannuation normal rights are safeguarded.

Foreign Service Allowance. A tax free allowance is payable.

Accommodation is normally provided rent free.

Duration of Engagement initially for a period of 3 years.

All applicants should normally be resident in the United Kingdom.

Applicants should note that the preferred age for all teachers is under 47 at the commencement of the engagement.

The Civil Service is an equal opportunities employer.

Requests for an application form and further details should be made to:

Service Children's Education Authority 2a
 MOD/54
 HQ DAED
 Court Road
 Eltham
 London SE9 5NR
 (Tel 01-859 2112 Ext 224/204)

The closing date for completed application forms is Friday 21 March 1986. Applicants would be well advised to telephone for application forms.



SUDAN KHARTOUM INTERNATIONAL HIGH SCHOOL (Khartoum School Trust Ltd) Khartoum, Sudan

A developing, presently co-educational, English-medium school, modelled on English private school system, leading to London C-levels. Present roll 140, ages 7-17 years. Class size limited to approx. 22 pupils.

Suitably qualified and experienced staff of either sex, married or single, are required to fill the following vacancies as from 1 August, 1986.

1. Senior Teacher/Teacher of Mathematics — Upper School.
2. Senior Teacher/Teacher of Physics — Upper School.
3. Senior Teacher/Teacher of Biology — Upper School.
4. Teacher of General/Combined Science — Middle and Lower School.
5. Remedial Teacher to take charge of a small class of about 7 children aged 11-18 years, with various learning difficulties and disabilities.

For posts 1 to 4, the ability to teach a second subject among those listed, or Chemistry, would be an advantage.

Terms include a local salary with superannuation in local currency; Overseas Expatriate Gratuity in US Dollars paid abroad normally quarterly; free furnished accommodation; free furnishings; paid summer leave and free air tickets annually; free out-patient treatment at a private nursing home; settling-in allowance; transport or mileage allowance; inflation allowance; free tuition for one eligible child at the school. Contracts for two-year minimum period extendable (except for post 6) where one-year renewable contract will be considered; longer contracts preferred.

Grades	Local Salary Range (£)	Overseas Expatriate Gratuity (US\$)
1	8844/8648	4224/4754
2	7064/6958	3680/4356
3	7064/6958	3498/3894
4	6658/7438	3300/3696
5	6028/6908	3038/3498
6	4788/5852	—
7	3620/4708	—
8	2200/3300	—

Appointments in Grades 1 and 2 are for the most senior posts. Head and Deputy Head. No expatriate appointments in Grades 3 and 4 are usually made except in special cases for which a special overseas gratuity could be offered. Starting position on scale will depend on qualifications, experience and seniority. Local salary will be considered adequate for comfortable living at present. For further particulars, please send a large s.a.e. to the Khartoum School Trust Ltd, c/o Box No. TES, 00498, TES, P.O. Box 20, John's Lane, London EC1M 4SK. Applications in duplicate with cv, photo, and names and addresses of three referees by letter to the above address within two weeks of the date of this advertisement. Interviews in London during March or early April.

SANDFORD ENGLISH COMMUNITY SCHOOL ADDIS ABABA ETHIOPIA

This independent, Multi-national School requires teaching staff for the 1986/87 session as detailed below.
 The School has a student complement of approximately 700 students between the ages of 4 and 18 years in Infant, Junior and Senior Divisions. English based education is provided and the school is a centre for London University GCE and local examinations.

Applications are invited from well qualified teachers in the following fields, to commence duties from 1st September 1986.

INFANT DIVISION

Class teachers

JUNIOR DIVISION

Class teachers

SENIOR DIVISION: Subject Teachers for Art, Boys Sport, English, Economics, History and Mathematics

Initial contracts are for 2 years and are renewable. Salaries are in the scale 21,420 - 33,989 Ethiopian Birr gross per annum. The present January 1986 exchange rate is 3.01 Birr equals one (£1) pound sterling.

Air transportation with baggage allowance is provided at beginning and end of contract and a return passage is provided to Kenya at mid contract for leave. Full accommodation is provided and medical expenses, excluding dental treatment, within Ethiopia are paid by the School. Conditions are favourable for married couples who both teach.

Letters of application, with detailed curriculum vitae including a contact telephone number and the names and addresses of three referees should be sent by AIR MAIL to the Headmaster, P.O. Box 30056 M.A. ADDIS ABABA, ETHIOPIA To Arrive not later than 23rd March 1986. Interviews will be held in the U.K. in April '86.

(16516)

DORNIER AVIATION TRAINING DIVISION

has vacancies for teachers of the English language to educate Cameroonians in English terminology for

ESP technical, aircraft and mathematics.

- Preference given to experienced qualified male TEFL teachers or married couple.
- One year renewable contract. Start 1st June, 1986. Spoken French an advantage. Interviews in London March/April.

Applications and CV with a contact phone number if possible to:

DORNIER GMBH, Personalreferat Ausland, Oberpfaffenhofen, 8031 Wessling, Federal Republic of Germany

(18424)

SHARJAH ENGLISH SCHOOL

Headmaster Michael J. Short
 Peace Recruitment Consultants have been engaged by the Headmaster of The Sharjah English School to recruit

AN ART SPECIALIST
 For September 1986. The school, which is situated in a delightful area in the United Arab Emirates currently has 300 pupils, mostly British, aged 4 to 13. Owing to the promotion of the present holder, an Art Teacher is required. He or she will assume responsibility for the teaching of Art throughout the school and will personally teach in the 7-13½ age groups.

We are looking for a dedicated Teacher who will be able to translate personal enthusiasm into practical encouragement. The school has well equipped Art and Pottery rooms and a flourishing Art Club. A limited amount of teaching in another subject may be required.

A 2 year renewable contract is offered, with excellent Tax Free Salary, Terminal Gratuity, Rent Free Air Conditioned Accommodation and Annual passage to the UK. Applicants must be single status, with relevant qualifications and experience.

Two copies of letter of application, in own handwriting, with names and addresses of two referees and, if possible, a recent photograph and a large SAE should be sent to:

Department B
 68 Eccleston Gardens
 St Helens WA10 3BN

To arrive before March 17. Interviews in UK in early April. Forms and further particulars will be sent to longlisted candidates.

OVERSEAS POSTS continued

PORTUGAL
 PRINCE HENRY INTERNATIONAL COLLEGE
 Vale Do Lobo, Alentejo, Algarve
 A Co-educational day school, pupils aged 3 to 16 years, requires for September 1988:
 SENIOR SCHOOL - English Literature/Junior School - 2 Teachers for the 6 to 10 yr. group.
 Teachers able to offer extra-curricular activities will be favourably considered (e.g. Music, Dance, Drama, etc.).
 Candidates must be qualified teachers. Married couples would be welcome.
 One (1) year contract. Salary with travel and Local Authority experience.
 Applications with curriculum vitae and photograph to be sent to: The Principal, Prince Henry International College, Vale Do Lobo, Alentejo, Algarve, Portugal. 460000 (17844)

ROME

A well established and rapidly growing English School in Rome requires, for September 1986, qualified British teachers with at least three years appropriate teaching experience for the following subjects to 'O' level:
 Mathematics and Science; Art and English; Music. Candidates may offer a combination of the above subjects. Applicants must be prepared to take part in extra curricular activities and in the pastoral care of the pupils.
 Additionally, one post for experienced qualified upper primary school class English teacher. Please apply to The Headmaster, Prince Henry International College, via Ercole Attanasio, 00178 Roma, Italy. c.v., photograph, enclosing names and telephone numbers of two referees. 460000 (19850)

SPAIN

URGENT
 Trained and experienced T.E.F.L. teacher required for a 12 month contract commencing 1st April 1986.
 Please telephone Lancing 0953 764922 (17353) 460000

Bahrain St Christopher's School IAPS

A complex of four distinct schools on three sites with over 1200 pupils, mostly British. There are three extended first schools serving nursery to 3rd year juniors and a middle school catering for 4th year juniors to 2nd year secondary pupils.

The following position is available from September 1988:

Head of Infants Scale 2

Applications are invited from single females with experience in Infant or First schools and preferably a special qualification in Infant Methods.

Salary from approximately £10,000 to £14,600 per annum tax free plus allowances of £3,600 tax free. Full details will be sent to all enquirers. Free furnished accommodation, annual air fare, medical insurance and other benefits are provided.

Interviews in London 24th - 27th March.
 Please apply with CV to Mr F J Smith, Gabbitts-Thring Services Ltd., 6-8 Sackville Street, London, W1X 2BR. Tel: 01-734 0181.

(04323)

Gabbitts-Thring

DUBAI COLEGE

Established 1978 by Emiri Decree
 Dubai College is a British style, co-educational, secondary school of some 400 pupils, conveniently situated in a purpose built complex with lavish educational and recreational facilities.

Small classes in the age range 11-18, taught by graduates of British Universities, follow a curriculum leading principally to London University (Home Centre) G.C.E. 'O' Levels (soon to become GCSE) and 'A' Levels, and also in appropriate cases to the Southern Regional Board C.S.E. Qualification.

Peace Recruitment Consultants have been engaged to recruit the following teachers for September 1988, and applicants must be Specialist, British Trained, Graduate Teachers (minimum two years experience):

1. CDT (Design Based)
2. Economics (with Geography)
3. Geography

An initial three year contract provides for a generous Basic Salary and Allowance, currently Tax Free, and full-time conditions of service, including Terminal Gratuity, Fully Furnished, Air Conditioned Accommodation, Baggage Allowance and Return Air Fares for Summer Holidays. Two copies of letter of application, in own handwriting, with names and addresses of two referees and, if possible, a recent photograph and a large SAE should be sent to:

Department J
 68 Eccleston Gardens
 St Helens WA10 3BN
 To arrive before March 17. Interviews in Britain on 9 and 10 April. Forms and further particulars about the school, the posts and the area will be sent to long listed candidates.

(04324)

ENGLISH LANGUAGE TEACHERS, KUWAIT



International Language Centres invites applications from English Language Teachers to join an already established language training team. Applicants should be male, native English speakers, aged between 25 and 40, of bachelor status with a degree (preferably in English or Modern Languages or Education), the RSA Prep. Cert TEFL and a minimum of two years' previous EFL experience.

The contract is for a one year period (approx) commencing late August 1988. The minimum salary, which is tax free in Kuwait, is 360 Kuwait Dinars per month. Return airfares, relocation allowance, terminal gratuity, housing and daily transportation to the teaching site are provided.

Paid holidays are six weeks per year, in addition to Kuwaiti Public Holidays.

For further details and application forms apply to:

Recruitment & Contracts Division
 INTERNATIONAL LANGUAGES CENTRES
 1 Riding House Street
 London, W1P 7PA
 Telephone: 01-580 4351

— Licensed Employment Agency. Licence No SE9517 —

(04327)

RUNNYMEDE COLLEGE Madrid, Spain

British secondary private co-educational day school of 270 pupils, requires qualified teachers with two years minimum teaching experience in UK for September to teach the following:

1. HISTORY and GEOGRAPHY To teach History from First Form through to 'O' and 'A' Level and middle school Geography perhaps to 'O' Level. Ability to teach Spanish might be an advantage.
2. FRENCH and SPANISH To teach French from Second Form through to 'O' and 'A' Level and eight periods Spanish to Intermediate level.
3. LATIN The sole teacher of Cambridge Latin Course throughout the School up to 'O' level. There is usually demand from two or three pupils for 'A' Level (London).
4. ART (and Design) Throughout School from First Form to 'O' and 'A' Level. The sole Art teacher.
5. BIOLOGY From Fourth Form to 'O' and 'A' Level.

Interviews in London mid-May. Spanish Social Security. Own salary scale. Two-year contract renewable.

Write for details and application forms to Headmaster, Calle del Arge, 9, 28002, Madrid, Spain. Tel: 010-94-1-4672327.

Oman Mining Company School

A primary teacher is required for April as Head of the English speaking school in Magan the company town. There are 26 pupils aged 5-11 mostly British.

Candidates should have at least three years teaching experience including overseas service in a similar environment. Teaching couples considered. Salary in Oman Rials from £18,000 per annum tax free. Accommodation provided and leave fares paid.

Please apply urgently with CV and names of 2 referees to Mr F.J. Smith, Gabbittas-Thring Services Ltd, 6-8 Sackville Street, London W1. Tel: (01) 734 0161.

(04384)

Gabbittas-Thring

Commonwealth Council for Educational Administration

The position of EXECUTIVE DIRECTOR of the Commonwealth Council for Educational Administration will become vacant from the beginning of 1987 and applications are therefore invited. The Secretariat is situated at the University of New England in Armidale, New South Wales, Australia.

The successful applicant would be required to devote approximately half of his or her time to the position, since a half time leave of absence in educational administration within the Centre for Administrative and Higher Education Studies at the University is likely to be associated with the appointment. The latter would involve teaching and the supervision of those within the appointee's field of competence. Total salary envisaged is within the range of \$40,000 to \$45,000.

Applicants should be graduates and should preferably have had experience in a senior administrative post. Ability to relate to people in a variety of Commonwealth contexts and situations would be essential. Commitment of a high order would be expected.

The position would be particularly suitable for an energetic senior person who has retired early and who feels the need for continued professional involvement.

Further details are available from the CCEA Senior Vice-President, Professor M. G. Hughes, Faculty of Education, University of Birmingham, Birmingham B15 2TT, United Kingdom. (18785)

LONDON BOROUGH OF HAVERING EDUCATION DEPARTMENT HUMANITIES ADVISER

Burnham Headteacher Group 8. Salary £14,864 - £15,963 + £878 London Weighting.

Applications are invited for this newly created advisory post from suitably qualified people with successful teaching experience in History and/or Geography.

An informal interest in Economics and Religious Education would be an added qualification. A broad understanding of current educational issues and initiatives is essential. A willingness to assist the development of cross-curricular projects and links between primary, secondary and further education phases.

The successful applicant will be expected to take up the post in September 1986, working in a team of Advisers covering most of the curriculum.

ADVISER/SENIOR LECTURER FOR BUSINESS STUDIES/ECONOMICS

Senior Lecturer/Lecturer Burnham FE Scale Salary £11,959 - £15,045 + £878 London Weighting.

Applications are invited for this challenging and interesting post with effect from 1st September 1986. This is a TVEI Authority and the successful applicant will be required to support this and other pre vocational curriculum developments which link Secondary schools closely with Further Education.

The postholder will spend approximately half of his/her time to advisory work with the Authority's Secondary Schools and the remainder to teaching duties in Business Studies and allied disciplines as a Senior Lecturer at Havering Technical College.

Application forms and further particulars for both posts from the Director of Educational Services, (Ref. STAFFING, JAO), Mercury House, Romford, RM1 3DR. Telephone: Romford 68999, ext. 276. Closing date 21st March 1986.

The above vacancies are exempt from the Staff Commissioning procedures. However, applications from employees of the GLC or MCCs with relevant experience will be welcome. (18785)

OVERSEAS POSTS continued

SAUDI ARABIA

ESL/CLAL SAUDI ARABIA E TAX FREE

Leading oil company engaged in comprehensive enhancement of training programmes. Urgent need for a Consultant (min 2 months) to develop educational activities for EFL curriculum. Apply exp. preferred.

£1,500/month, no tax, all living exp. paid.

Further details from or write to: Dudley Harrop, Consultant, 33a Duke Street, Hens 9 1UR. Tel: (0451) 531978. 460000

SPAIN

SANTIAGO DE COMPOSTELA

TEACHERS required for English summer school (July/August 1986) and for the academic year 1986-87.

Nursery/Infant teachers with at least two years' experience to teach English, Spanish, subject and sport activities to Spanish children.

Experienced E.F.L. teachers, with an interest in sport and other cultural activities, for age-range 9-16.

2. Experienced teacher for doctors and medical students. Apply by letter to the Director, Chester College, Montevideo 20, Santiago de Compostela (Coruna), Spain, enclosing C.V., letter of recommendation, a recent photo and full details (inc. tel. number) of two referees. Interviews to be held in London at Easter. 460000 (17748)

SPAIN

ENGLISH INTERNATIONAL COLLEGE

Carreres Cadiz-Málaga 189, Marbella, Málaga.

Qualified and experienced teacher of HISTORY required for September 1986. All-ages (3-18) school of 350 international students following a British English curriculum. The successful candidate will be required to offer the subject, and English, Spanish, German, and other cultural activities.

Successful candidates may also be considered for the newly created post of DEPUTY HEAD.

Letter of application plus curriculum vitae and the latest master as soon as possible. (17243) 460000

SPAIN

INTERNATIONAL SCHOOL AT SOTOGRADE

For September 1986.

SENIOR TEACHERS for combination of Science & Maths (Middle School), Geography, Spanish, Sports, and JUNIOR TEACHERS.

Assistant Supervisor (residential) with part-time teaching or catering. Principal c/o A Caprio & Sons Ltd., 20 Line Wall Road, Gibraltar. (17609) 460000

SPAIN

ALORA COLLEGE

Marbella. E.F.L. Teacher required Sept. 1986 to take charge of the subject throughout the large international school and lead a team of 3. In addition to teach adult classes.

Applicants with full c.v. to be sent to the Director within two weeks of this advertisement. Interviews in U.K. Spring 1986. (17649) 460000

TENERIFE SOUTH

Two Experienced Teachers wanted for September 1986. Posts could suit a man/wife team.

1. English & French specialist to teach to 'O' level standard.

2. Teacher for preschool, classes up to 6 years of age. Write giving REF details to: The Head, Wynasta School, C/O Aleno, Arona, Tenerife. (18844) 460000

SUMMER TEACHING JOBS IN AMERICA

Work on American children's camps, mid-June to end August; see ad under 'Holidays and Recreation'. (94335) 460000

SWITZERLAND

AIGLON COLLEGE

Château Villeret, Switzerland. Independent school for 260 pupils (11-18 years).

The man or woman appointed will have wide administrative and financial experience with a degree of responsibility.

3. Bilingual French and English is a necessity; other languages an asset. The post becomes vacant August 1986. Salary in the region of £25,000 per annum. Further information available from The Chairman of the Governors, Aiglon College, c/o Headmaster's Office, Fettes College, Carrington Road, Edinburgh EH4 1JX. 460000 (16971)

TOKYO

Wanted an experienced teacher

of Art with Degree Qualifications to teach all ages from 3-18 years. Experience in teaching O.L., A.L. and I.B. courses necessary. Experience in painting required.

Salary £25,000 p.a. and three references to: The Headmaster, International School of the Americas, 3-1 Hiroo 4-chome, Shibuya-ku, Tokyo 150 Japan. Tel: 400 5841. 460000 (88941)

TURKEY

Graduates with TEFL qualifications (prep) required by Ministry of Education

to teach English in the Ministry of Education. Candidates should have a minimum of 2 years' experience in a TEFL environment. Candidates should be prepared to travel and live in Turkey. Send c.v. and photo to: The Principal, Cadit, Altinparmak Caddesi, Bursa, Turkey. (17657) 460000

UNITED STATES OF AMERICA

Montessori Certified

Teachers needed for 3-6 years and Montessori Elementary teacher for 6-9 years at well established school.

Send resume: April interviews. Montessori Centre Academy, 1014 Wm. Flynn Blvd., Allentown, PA 18101, U.S.A. (18932) 460000

ADMINISTRATION

Local Education Authority

ESSEX COUNTY COUNCIL

Careers Service

TEMPORARY CAREERS OFFICER (EMPLOYMENT LIAISON)

Scale 4 or 5 or 6

£6,900 - £7,713 or £7,920 - £8,697 or £8,978 - £9,551

Post No. CO 865

Brentwood

This post is temporary

vacancy for the postholder is covering for the absence of staff on maternity leave.

The Careers Officer appointed will work with unemployed young people, helping them to find jobs or suitable training courses.

Closing date: 31st March 1986.

Application forms and further details from the Director of Education, Essex County Council, 67 Market Road, Chelmsford, Essex, CM1 3DR. Tel: Chelmsford 267899, Ext. 1636. (17748) 480000

HEALTH EDUCATION COUNCIL

MY BODY PROJECT

Project Director

My Body Project is a primary school health education project, with particular reference to children aged 10 to 12. Children use the cross-curricular project materials to study the working of the whole body, with special reference to the health of the breathing system and the effects of air pollution and smoking.

Since its inception in 1983, the Project has been disseminated by means of a series of over 60 SAs in England, Wales and Northern Ireland.

The REC and Sheffield LEA now seek a qualified teacher, Health Education Officer, or lecturer with primary school experience for a 3 year appointment, starting as soon as possible. He/she will lead a team which will continue the dissemination, evaluation and development of this important project.

Applicants will be paid a salary plus an appropriate honorarium of £1,170. Will be based in Sheffield but travelling elsewhere and outside away from home will be required.

In the case of a Sheffield teacher being appointed the period of appointment will constitute a secondment. If this is not the case the successful applicant will need to negotiate secondment arrangements with his/her employer.

Application forms and further details from CHIEF EDUCATION OFFICER, EDUCATION DEPARTMENT, TEACHERS DIVISION, PO BOX 87, LEOPOLD STREET, SHEFFIELD S1 1JL. CLOSING DATE 21ST MARCH. (18938)

City of Sheffield

An Equal Opportunity Employer

General Inspectors

£16,236 - £17,376

General Inspector for Science

To be responsible for advising on science at the secondary stage and for coordinating Inspectorate work in secondary school science across the County.

General Inspector for Adult and Further Education

To be responsible for advising on Adult Education across the County with some work in Further Education.

Both posts will also have a responsibility for general advisory work in a group of schools as a member of the Area team and require good relevant teaching experience.

Salary in accordance with Southbury Group 9 at present £15,972 - £17,112, plus £264 Fringe Allowance.

Application form from County Education Officer (Ref. NTP) Education Department, County Hall, Kingston upon Thames KT1 2DJ, on receipt of a s.e. Closing date: 21 March 1986. (18938)

SURREY COUNTY COUNCIL

LONDON BOROUGH OF EALING

This post is subject to the LMGC ring-fence procedure. With their agreement it is now being offered on an unrestricted basis. Applications are invited from anyone with appropriate qualifications or experience, but priority will be given to employees of the GLC or MCCs.

PROFESSIONAL ASSISTANT

£13,208-£14,355 p.a.

(with possible progression after one year to a scale with a maximum of £16,441)

Applications are sought from an energetic and able graduate with at least five years successful teaching experience who wishes to pursue a career in educational administration at a professional level.

Please quote reference: ED 780/A. Closing date 26.3.86.

Applications from employees of the GLC or MCCs with relevant experience will be welcome.

TUTOR

Basic Education Scheme, The Study Centre, Churchfield Road, Ealing W13

£96.10 per week for 10 hours per week

Part-time teacher required from April 14th 1986 to teach literacy to unemployed adults at this drop-in centre for literacy, numeracy and E.S.L. Experience in adult literacy is essential and interest or background in E.S.L. also an advantage. Must have sympathetic personality and be able to relate to students and volunteer teachers.

Applicants should be unemployed or under threat of redundancy. The post is funded under the MSC VPP scheme and is for an initial period of up to 52 weeks.

Ring GMI Counsellor for further details and application forms on 01-579 6329.

Please quote reference: ED787. Closing date 20.3.86.

Application forms obtainable from the Personnel Office, Room A204, Town Hall Annex, New Broadway, Ealing W5 2BY. Tel: (01) 840 1986 (24 hour service). (04385)

CAMBRIDGESHIRE

EDUCATION DEPARTMENT

SENIOR INSPECTOR FOR MICROTECHNOLOGY AND LEARNING RESOURCES

Soulbury Group 8 £14,864 - £15,963

Applications are invited from suitably qualified persons, with wide experience, for the above post based in Huntingdon. Duties will include advising on learning resources and the use of Microtechnology within the Education Service.

Details and application forms obtainable from: Chief Education Officer, Shire Hall, Castle Hill, Cambridge. Telephone: 0223 317920 Closing date 21st March. (18934)

STAFFORDSHIRE

County Council

EDUCATION DEPARTMENT

ADVISER FOR EDUCATION AND TRAINING

Soulbury H.T. Group 8

£14,664 - £15,963 (under review)

Applications are invited for the post of Adviser for the Education and Training of 14-19 year olds which will include curricular development in the last two years of compulsory education and all work in the Authority's sixth form colleges, the College of Further Education and Y.T.S. Units.

Applicants should have extensive experience in work with these age groups and this post offers a major challenge at a time of rapid change in the Authority's range of provision. Forms of application obtainable from and returnable to the Chief Education Officer, Town Hall, Bury B9 0SW (Tel: 061-764 6000 Ext 9) by 21st March 1986.

T.V.E.I. PROJECT DIRECTOR

Headteacher Scale Group 8

£14,664 - £15,963

Required, as soon as possible, Project Director (Head Teacher Scale Group 8) for the T.V.E.I. Project. The project which commenced in 1984 is a dynamic scheme involving major curriculum innovation in four 11-16 High Schools and two post-16 institutions, together with a highly innovative S.E.N. element. Candidates should have senior management experience in 14 to 19 education, detailed knowledge of curriculum change relevant to T.V.E.I. and preferably direct experience of T.V.E.I.

Further particulars are obtainable from the Director of Education, Education Department, Market Street, Bury, Lancs. B9 0DN to whom completed applications should be returned by Monday 24th March 1986.

AN EQUAL OPPORTUNITY EMPLOYER

BURY METROPOLITAN BOROUGH

ASSISTANT EDUCATION OFFICER

(Primary and Secondary)

P.O. D/E/F - £14,025 - £16,908

Applications are invited for this fourth tier post from candidates with a proven experience of management at school and, or Local Authority level and with graduate level qualifications.

The administration of the service is based on nine districts, and initially the post will be concerned with the management of schools in the Burton-on-Trent - Uttoxeter areas.

Application forms and further particulars available from the Chief Education Officer, Staffing Non-Teaching Section, Tipping Street, Stafford, ST16 2DH.

Closing date 14 days from the appearance of this advertisement. Trade Union Membership desirable.

Staffordshire

County Council

EDUCATION DEPARTMENT

ADVISER FOR EDUCATION AND TRAINING

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Staffordshire

County Council

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County Council

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BURY METROPOLITAN BOROUGH

ASSISTANT EDUCATION OFFICER

(Primary and Secondary)

P.O. D/E/F - £14,025 - £16,908

Applications are invited for this fourth tier post from candidates with a proven experience of management at school and

Administration General

BRITISH SPORTS ASSOCIATION FOR THE DISABLED
Full-time Development Officer required for the BSA's Greater London Region.
Applications welcome from self-motivated administrators with genuine interest in sports, physical recreation and disabled people. Applications from able-bodied, disabled persons would be welcome.
Salary negotiable within the range of £5,908 to £9,517 + London weighting according to qualification and experience.
Details from: Dr. Robert Pearce, BSA, Hayward House, Barnard Castle, Aylesbury, Bucks. HP8 3PP.
Tel: 0295 67885
Closing date: 21st March 1986. (150579) 500000

Child Care

GLOUCESTERSHIRE
Nursing & Therapeutic Community for 35 emotionally disturbed boys and girls from 7 to 14, where the adults live with the children in a very real sense, is looking for one or two suitably experienced additional staff. The successful candidate will be a very fully in the whole life and work of the community. Appropriate salary.
Homer Lane Trust, New Barns School, Church Lane, Toddington, Cheltenham, Glos. GL54 5DR. (150570) 540000

Educational Psychologists

DORSET
TRAINEE EDUCATIONAL PSYCHOLOGIST
(Temporary posts)
Applications are invited for this post, available from 1st September 1986 to 31 August 1987. The successful candidate will be expected to secure a place on a training course for the academic year 1986/87. Applicants must possess an honours degree in psychology, a teaching qualification and a minimum of two years' experience in a school or college. Salary Band 21A (to be returned by 21st March) and further details and application form may be obtained from the Education Staffing Officer, Dorset DT1 1XJ. Informal enquiries can be made to Mr. P. J. Prior, Principal County Psychologist, Tel: Poole (0685) 745500. 560000

DORSET
EDUCATION COMMITTEE
Required from 1 May 1986
TUTORIAL CLASS TEACHER
SCALES
WESTERN AREA
BASED AT PSYCHOLOGICAL SERVICE CENTRE
WINTERSHURTON MONKTON
NEAR DORCHESTER
Main duties include the teaching of children with specific difficulties in learning, attending the Centre on a part-time withdrawal basis for a period of 10 weeks. Further details may also be obtained from the Education Staffing Officer, Dorset DT1 1XJ. Informal enquiries can be made to Mr. P. J. Prior, Principal County Psychologist, Tel: Poole (0685) 745500. 560000

NORTHAMPTONSHIRE
EDUCATION
DEPARTMENT
APPOINTMENT OF
EDUCATIONAL
PSYCHOLOGIST
Educational Psychologist,
Northampton area.
Salary range for fully qualified staff: £14,664 - £15,963 (plus £678 London Weighting Allowance).
Applications are invited from suitably qualified persons for the above post, which will take effect from 1st June 1986 or as soon as possible thereafter.
Applicants should have an honours degree in psychology or an equivalent, and should have a recognised postgraduate qualification in educational psychology, or very slow learning and/or autism.
The post holder will be expected to hold a full driving licence and an allowance will be paid for the use of a private car for official business.
Further details and application form, returnable by 21st March 1986, are available from the County Education Officer, ref. G/87/54/15, Northampton House, Northampton. For informal information contact: Mr. S. E. Fox, Principal Educational Psychologist, (01-303 7777, ext 580 or 541). Closing date: 21st March 1986. 560000

HEREFORD CATHEDRAL SCHOOL

seeks to appoint a

BURSAR

and Clerk to the Governors at this 11-18 co-ed day and boarding school of 560 pupils for September, 1986.

Similar experience an advantage but applications from younger qualified accountants welcomed. Experience of modern management techniques and computer applications helpful. Salary not less than £15,000.

Details from Peter J. Prior, C.B.E., F.C.A., Chairman of Governors, The Cathedral School, Hereford HR1 2NN. Closing date 4th April, 1986.

LONDON DIOCESAN BOARD FOR SCHOOLS

Administrative Officer

required for work involving general administration of Voluntary Aided schools. Previous experience with Diocesan or Local Education Authority schools desirable. Ability to type essential.

Starting salary £9,500 - £10,000 depending upon qualifications and experience.

Applications before 28 February to:

The Director,
30 Causton Street,
London SW1P 4AU
Tel: 01-821 9311 (Cynthia Norman)

Educational Psychologist

(5 Posts)
SCHOOL PSYCHOLOGICAL SERVICE

Applications are invited from fully qualified psychologists, or from those in the process of completing their post graduate training, for the above posts which have been established as part of the development and consolidation of the School Psychological Service. The successful applicants will be involved in work both with individual children and with advisory and systems based work.

Salary on Southbury Scale: Q.T.5.4 £11,051 - H.T.7.4 £14,979 p.a.

Application form and further particulars available from Chief Education Officer, Staffing Non Teaching Section, Education Offices, Tipping Street, Stafford, ST16 2DE. (Enclose SAE for reply).

Closing date 14 days from date of advertisement. Trade Union Membership desirable.

Staffordshire
County Council

FURTHER EDUCATION UNIT

The FEU which is an advisory, intelligence and development body for further education requires as from 1 September 1986:

Development Officer

To assume responsibility for work in the area of mainstream Business Education.

Applicants should have experience over a wide range of FHE curricula, teaching experience is essential and experience in curriculum and staff development and dissemination desirable. Experience in Marketing FHE and/or enterprise education would be an advantage. An ability to work as an FEU team member, with FEU staff in a variety of institutions and to write reports, is also necessary.

The post will be based in London, but some travel will be involved. Salary range £14,873 - £19,728 (including £1,365 per annum London Weighting).

The appointment will be for a period of three years with a possible extension of not more than a further two years. Secondment from present posts is preferred but other arrangements are possible.

Application forms and further information are available from: The Further Education Unit, Room 5/97, Elizabeth House, York Road, London SE1 7PH. Telephone: 01-934 9424/9423 (direct line).

Closing date for receipt of completed application forms is Friday 4 April 1986. (04329)

Education Advisers

Christian Aid requires three senior educational advisers with experience in adult education to join its three Regional Groups: Africa/Middle East, Asia/Pacific and Latin America/Caribbean.

He/she will devise initiatives for educational work related to the region, prepare and develop resources and share in educational programmes related to church and secular networks.

A Christian commitment, understanding in world development and overseas experience are important. For the Africa/Middle East Group post knowledge of French or Arabic is an advantage, for the Latin America/Caribbean Group Spanish is necessary.

Apply in writing only please sending 24p stamped addressed envelope for a job description and application form to:

Personnel Officer,
Christian Aid,
PO Box 1, London SW9 6BH,
Closing date 24th March, 1986.

1. ASSISTANT EDUCATION OFFICER (Nursery and Primary)

2. ASSISTANT EDUCATION OFFICER (Secondary/Tertiary)

T. O. (D) £12,169-£13,308 p.a.

Applications are invited for these fourth tier posts, both of which would be suitable for new entrants to educational administration. Candidates must have teaching experience. The post of Assistant Education Officer (Secondary/Tertiary) is offered as a temporary two year secondment; the other post is permanent. Both posts will offer excellent opportunities to become involved in a wide range of responsibilities across the designated sector of education.

Application forms and further particulars are obtainable from and returnable to the Director of Education, Town Hall, Stockport SK1 3XE (Tel: 061-480 4949, Ext. 3813), by 21st March 1986. (04329)

STOCKPORT
An Equal Opportunities Employer

Education Officer (FURTHER AND COMMUNITY EDUCATION)

Salary: PO (£13-16) -
£15,453 to £16,555

Applications are invited for the above post, which will be vacant on the 1st May 1986. Responsibilities will be across the whole spectrum of Further and Community Education, and the postholder will be expected to exercise initiative and to make a significant contribution to the development of the service.

Application forms and further details obtainable from the Director of Education, County Hall, Chichester, West Sussex PO19 1RF, or by telephoning Mrs Vigor on Chichester 777783.

Closing date: 21st March 1986. (04340)

west sussex

NATIONAL FEDERATION OF WOMEN'S INSTITUTES

Education and Training Officer

He/she will review and develop NFWI Education Policy, promote its education work, liaise with outside educational bodies, co-ordinate special projects, plan, administer and devise courses in Adult Education for WI members.

Candidates should have some years' experience of working with adults, a thorough knowledge of modern policy, practice and training methods and a commitment to continuing education.

The post is London based, requires servicing a quarterly committee and will involve some travelling. Salary within the range £10,467 - £14,073 per annum.

Application forms and further details from: Mrs. I. Norden, Personnel Officer, NFWI, 35 Euston Street, London SW1W 9NT. Tel: 01-730 7212. Closing date: 24th March 1986. (04329)

DIRECTORATE OF EDUCATION

Senior Educational Psychologist

(Re-advertisement)

Salary Range: Southbury Head Teacher
Group 8 - £14,664 - £15,963 (Plus
£678 London Weighting Allowance)

Applications are invited from fully qualified Educational Psychologists with relevant and substantial experience, for this newly created post of Senior Educational Psychologist, to commence duties on 1st April 1986 or as soon as possible afterwards. The postholder will be responsible for assisting the Principal Educational Psychologist in the organisation and management of the Service and, depending on special interests, to develop and initiate activities within these areas.

The post carries a Casual Car User Allowance, Relocation Assistance and other benefits available.

Temporary Educational Psychologist

£9,564 - £15,657

Applications are invited for an immediate temporary vacancy for a fully qualified Educational Psychologist. Commencing salary dependent upon age and experience.

Application forms and further particulars for both posts from the Educational Services Secretary, Town Hall, Crayford (01-303 7777, ext 542/543). Informal enquiries: Mrs S. E. Fox, Principal Educational Psychologist (01-303 7777, ext 580 or 541). Closing date: 21st March 1986.

Applications from employees of the GLC or MCC's with relevant experience

Bexley London
Borough

EDUCATIONAL PSYCHOLOGISTS

HERTFORDSHIRE
BISHOP'S STORTFORD COLLEGE, JUNIOR SCHOOL (I.A. P.S. 240 boys, boarding)
Required in September, a well-qualified teacher, to take charge of a cluster of four or five year-classes.
A willingness to enter fully into extra-curricular activities is essential. Will be interested in drama, art or sport especially.
The new Junior School has fine new facilities, including a multi-purpose hall and a very well-equipped classroom, library, craft and television room.
College accommodation is available.
Salary Scale (Burnham 2-3) with London weighting. Full curriculum vitae and references, with two recent photographs, should be sent to The Master, The Junior School, Bishop's Stortford College, Mase Green, Herts. CM9 3PH. (150584) 560000

NORTHUMBERLAND

Applications invited from teachers interested in training as an Educational Psychologist and willing to work for Northumberland Education Authority for at least two years period after qualification.
Candidates should have an honours degree in psychology, or equivalent, and should have completed a year's training and experience.
Salary: Burnham Scale 3 Points 4-5. Training involves a one or two year postgraduate course leading to a higher degree in educational psychology. Appointment to the post would be conditional upon candidates, with the support of the Authority, securing a place on an appropriate course.
Application forms and further details forward to: Ms. S. E. Fox, Director of Education, County Hall, Newcastle, Northumberland NE1 7RU to whom completed forms should be returned within 14 days of the closing date (17.03.86) 560000

Examiners

THE ASSOCIATED EXAMINING BOARD

The Board invites applications for the post of ASSISTANT EXAMINER in ECONOMICS, PHYSICS, CHEMISTRY, BIOLOGY, HISTORY, GEOGRAPHY, MODERN LANGUAGES, MATHEMATICS (161) and ADVANCED LEVEL for the 1986 examinations.

Applicants should have a relevant teaching or training qualification and a good working knowledge of the subject at this level.

Further information and application forms may be obtained from The Secretary General (AG), The Associated Examining Board, Stag Hill House, Guildford, Surrey GU5 5XJ, to whom completed forms should be returned not later than two weeks from the date of advertisement. 600000 (16755)

THE ASSOCIATED EXAMINING BOARD

The Board invites applications for the posts of CHIEF EXAMINER, ASSISTANT CHIEF EXAMINER, ECONOMICS (161) and ADVANCED LEVEL for the 1986 examinations.

Applicants should have a degree or equivalent qualification in Economics, a minimum of four years' recent relevant teaching experience and a high level of personal achievement.

Further information and application forms may be obtained from The Secretary General (AG), The Associated Examining Board, Stag Hill House, Guildford, Surrey GU5 5XJ, to whom completed forms should be returned not later than two weeks from the date of advertisement. 600000 (17255)

YORKSHIRE AND HUMBERSIDE REGIONAL EXAMINATIONS BOARD

APPOINTMENT OF
ASSISTANT EXAMINERS

Applications are invited for the posts of Assistant Examining Officers for the following subjects: Applied Mathematics, Biology, Chemistry, Economics, English, Geography, History, Mathematics, Modern Languages, Physics, Psychology, Sociology, and Statistics. Candidates should have a degree or equivalent qualification in the subject, a minimum of four years' recent relevant teaching experience and a high level of personal achievement.

Child Care Computer Studies Mathematics Office Practice Training

Further details and application forms, which must be returned by 17th March 1986, may be obtained from The Secretary (ICP), Yorkshire and Humberside Regional Examinations Board, 1133 Springfield Avenue, Harrogate, North Yorkshire HG1 5PU. (17771) 500000

Educational Sales Representative

Arnold-Wheaton the publishing division of E. J. Arnold, Britain's leading Educational Supplier, is looking for a full time member for their sales team covering the following areas:
East London, Home Counties East and South East of London.

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The Job Involves visiting primary and secondary schools to sell the full range of our primary and secondary school books.

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Closing date 21st March 1986.

This vacancy is open to all people irrespective of sex, race or disability. (04323)

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Applicants should be 25-32 years and possess the drive and ambition to train for a new career. In addition to a first-class induction programme covering product range, marketing and commerce, which is designed to equip you to succeed within our organisation. You will receive ongoing training to keep you up-to-date with new product developments and the latest sales methods.

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For further details, please telephone Ian Macdonald on 01-888 2828, or write to him at Roboserve Limited, 19 Avenue Road, Parnall, Middlesex UB6 7LG. (Interviews will be held locally during the Easter vacation.) (04307)

Appointment of Director-General

The Board of the British Council invites applications for the post of Director-General, which falls vacant in the summer of 1987. The Director-General is the chief executive of the Council. The post is open to serving staff and outside applicants, men or women.

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Applicants should have substantial administrative experience, independence of mind combined with a willingness and ability to speak for the Council to the media or within Whitehall, the ability to establish relations of mutual confidence with Government departments, organizations and individuals with whom the Council works, both at home and overseas, and a wide knowledge of British culture. The post involves extensive travel.

The appointment will be for an initial period of five years. The normal retirement age for senior Council staff is 60. The salary of the post is equated to and kept in line with that of a Second Permanent Secretary in the Civil Service, which is currently £56,000 a year.

The closing date for applications is Friday 2 May 1986. For further details and an application form, please write to the Secretary, The British Council, 10 Spring Gardens, London SW1A 2BN, marking the envelope 'DG'.

The British Council

MICROELECTRONICS SUPPORT UNIT

appointment of

Director

The Chairman of the Management Board of the Unit, Mr M. G. Nichol, invites applications for the post of Director, who will be required to take up duties as soon as possible after 1 April, 1986.

The Unit will support the local education authorities and teacher training establishments of England, Wales and Northern Ireland in the task of integrating and developing new technology in schools. It will provide a central source of information, train the teacher trainers, develop curriculum materials and support work on new technology in special education. The Unit will build upon the work of the Microelectronics Education programme which is to terminate on 31 March 1986.

The Director will be required to set up and run the activities of the Unit under the supervision of the Management Board. Applicants should be able to demonstrate a sound knowledge of new technology in schools and of the education system as a whole. Proven administrative capability will also be required.

It is likely that the post will be in the Birmingham area. Salary will be on the scale £22,222-£27,065. The post is pensionable under the contributory Local Government Superannuation Scheme.

Applications to Mr M. G. Nichol (MSU), Director of Education, Wirral Borough Council, Municipal Offices, Cleveland Street, Birkenhead, Wirral L41 8NH.

Closing date 21 March 1986.

MISCELLANEOUS continued

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H.M. YOUNG OFFENDER CENTRE

TWO POSTS: LECTURER IN GENERAL EDUCATION

Required for September 1986 suitable qualified and experienced teachers to deliver a range of educational programmes of the training.

Applications are invited from teachers who are able to demonstrate an interest in the education of pre and post 16 age group and are prepared to use their initiative to implement a progressive programme.

Those appointed will have sensitivity and commitment based on skills drawn from a wide range of professional and personal experience.

Further details available on request from the Director of Education, Further Education Section, County Hall, Glenfield, Leicester, to whom completed application forms together with curriculum vitae should be sent by 21 March 1986 (12.00).

SUMMER TEACHING JOBS IN AMERICA: Work on American children's camps, mid-June to end August, see under 'Holidays and Accommodation'. 600000

SUSSEX Business Manager required April 1986 for Japanese school, at least 10 years experience necessary. Fluent in Japanese and English, able to read and write the 3 Japanese scripts, conversant with British and Japanese business and banking procedures. Please apply to the Headmaster, Ruckley School, Ruckley, Gillingham Road, Ruckley, Northampton NN4 3JH. 0533 830656. 600000

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The British Council

PHYSICS TEACHER

Gearhart Geodata Services Limited is a major International oil field service company with a consistently successful track record in the North Sea and worldwide. Our commitment to improving service provides for a challenging work environment and is matched by a progressive attitude towards staff management and development.

We wish to recruit a Physics Teacher to the Training Department based at our Aberdeen Head Office. The work will involve training Science and Engineering Graduates in the operation and maintenance of the measuring and test equipment, used in our well-site operations.

The successful applicant, who will presently be teaching physics to A-level or Higher Standard, will join an expanding training department and will receive full training in all aspects of the company's operations. He/she should be prepared to make occasional visits to offshore installations.

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House Moss Drive, Kirkhill Industrial Estate,
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Required for September 1986 suitable qualified and experienced teachers to deliver a range of educational programmes of the training.

Applications are invited from teachers who are able to demonstrate an interest in the education of pre and post 16 age group and are prepared to use their initiative to implement a progressive programme.

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THE TIMES EDUCATIONAL SUPPLEMENT 7.3.86

ENGLISH AS A FOREIGN LANGUAGE

NOTTINGHAMSHIRE COUNTY COUNCIL

BATON HALL English as a Foreign Language. Tel: 05372 1895 or write to Wern Long Outdoor Centre, Devon EX39 1NG. (01414) 680000

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HEAD OF COURSE with wide experience of boarding schools required for summer of 1986. 4 week residential course for children aged 11-16. Non-teaching, resident post. Details from: Vocational Training Agency, 100 Victoria Road, Newbury, Berkshire RG14 4JF. (05652) 700000

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NSA COURSES AT ITTC

Learn to teach English as a foreign language at the International Training Centre, Bournemouth. The Centre runs regular 4 week introductory courses leading to the Royal Society of Arts Certificate in Teaching English as a Foreign Language. For details write to: ITTC, 674 Wimborne Road, Bournemouth, Dorset BH1 1JF. (02528) 700000

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Graduate staff required for summer of 1986. The posts are for 4/5 week periods on English Language, History, Geography, Art, Music, and Physical Education. For details write to: Kent County Council, 100 Victoria Road, Newbury, Berkshire RG14 4JF. (05652) 700000

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Required by MODIE ADVENTURE TRUST to join this well established company. The successful applicant should be skilled in a wide range of outdoor pursuits, including climbing, orienteering, canoeing, and sailing. For details write to: MODIE ADVENTURE TRUST, 100 Victoria Road, Newbury, Berkshire RG14 4JF. (05652) 700000

YOUNG EXPLORERS' TRUST

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